

ORDER

8110.37B

DESIGNATED ENGINEERING REPRESENTATIVES (DER) GUIDANCE HANDBOOK



November 12, 1996

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

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FOREWORD

This order provides a handbook of guidance, procedures, technical guidelines, and limitations of authority for Designated Engineering Representatives (DER). It is to be used by all Aircraft Certification Directorates and Aircraft Certification Offices (ACO), as an aid in the uniform administration of the DER program. This handbook contains guidance material for the DER and is designed to provide a better understanding of the Federal Aviation Administration (FAA) DER management system for all concerned personnel.

Any deficiencies found, clarifications needed, or improvements to be suggested regarding the content of this order should be forwarded to the Aircraft Certification Service, Automated Systems Branch, AIR-520, Attention: Directives Management Officer, for consideration. Your assistance is welcome. Federal Aviation Administration Form 1320-19, Directive Feedback Information, is located on the last page of this order for your convenience. If an interpretation is urgently needed, you may contact the Aircraft Engineering Division, Policy and Procedures Branch, AIR-110, for guidance, but you should also use the FAA Form 1320-19 as a follow-up to verbal conversation.



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1. **PURPOSE.** This order prescribes the guidance and procedures to be used by the aircraft certification directorates and the aircraft certification offices in administering the Designated Engineering Representative management program. This order replaces existing orders and notices governing the selection, appointment, orientation, and administration of these designees; and establishes a structure for managing and evaluating the performance of the DER.

2. **DISTRIBUTION.** This order is distributed to Washington headquarters branch level of the Aircraft Certification Service and Flight Standards Service, to branch level of the regional aircraft certification directorates and Regional Flight Standards Division, to all aircraft certification offices, to the Brussels Aircraft Certification Division, to all Flight Standards Service District Offices, and to all Designated Engineering Representatives.

3. **CANCELLATION.** Order 8110.37A, Designated Engineering Representatives (DER) Guidance Handbook, dated May 31, 1995 is canceled.

4. **EXPLANATION OF MAJOR CHANGES.** This order incorporates the guidance and procedures for administering the DER program formerly contained in Order 8110.37A with the following changes:

a. The Designee Management Program is defined.

b. Experience levels required for software delegation as defined in N 8110.56, Designated Engineering Representatives Delegations in Software, have been incorporated.

c. Policy concerning appointment outside the United States has been incorporated.

d. Code of Federal Regulations reference which prohibits the use of the DOT or FAA logos by DERs on business forms has been incorporated.

e. Information on how to obtain required publications through FedWorld has been incorporated.

f. The DER oversight process contained in N 8110.59, Documenting Designated Engineering Representative (DER) Oversight has been incorporated.

g. The DER participation in Parts Manufacturer Approval and Technical Standard Order Approval process as defined in Order 8110.42(), Parts Manufacturer Approval Procedures, has been incorporated.

Note: The symbol "()" indicates a frequently revised document. The latest revision of the document is applicable.

5. BACKGROUND.

a. Section 44704 of Title 49 United States Code (49 USC 44704), empowers the Administrator to issue type certificates for aircraft, aircraft engines, and propellers and to specify regulations as applicable to the type certification function. section 44702(d) of Title 49 USC authorizes the Administrator to delegate to a qualified private person, or to an employee under the supervision of that person, a matter related to the examination, testing, and inspection necessary to the issuance of such certificates. The delegations are limited in scope in that all requirements, policy, direction and interpretations must reside with the Administrator.

b. Part 183 of the Federal Aviation Regulations (14 CFR Part 183), Representatives of the Administrator, prescribes the requirements for designating private persons to act as representatives of the Administrator in the examining, inspecting, and testing of persons and aircraft for the purpose of issuing airman and aircraft certificates. Subpart B of Part 183 empowers the Manager, Aircraft Certification Office, or the Manager's designee, to select DER's from qualified persons who apply by a letter accompanied by an FAA Form 8110-14, Statement of Qualifications. Designation of a private person as a DER is a privilege granted by the Administrator. It is not the right of every qualified applicant to be granted a DER designation. Section 183.29 defines the privileges for appointments in the following technical fields:

- (1) Structural Engineering.
- (2) Powerplant Engineering.
- (3) Systems and Equipment Engineering.
- (4) Radio Engineering.
- (5) Engine Engineering.
- (6) Propeller Engineering.
- (7) Flight Analyst.
- (8) Flight Test Pilot.
- (9) Acoustical Engineering.

c. DER Management Program. The DER management system enables the FAA to have a large number of highly qualified technical people perform the enormous amounts of examinations, testing, and inspections necessary to determine compliance with pertinent regulations. DERs offer technical expertise with state-of-the-art knowledge. FAA specialists understand the framework of critical regulations that allow technology to be applied safely. The DER and the FAA are both responsible to assure the DER management system is properly administered. The FAA will decide when to get directly involved in a project and the nature of that involvement. The DER will be accepting increased involvement as a necessary way of doing business and obtaining certifications. FAA interaction with DERs is highly interdependent, building on mutual interests the FAA and manufacturers/operators have in achieving the required level of safety.

d. Definitions. The following terms have the meaning given below when that term is used in this order.

- (1) **AC** - Advisory Circular.
- (2) **ACO** - Aircraft Certification Office.
- (3) **AD** - Airworthiness Directive.
- (4) **AFM** - Aircraft Flight Manual (means Airplane Flight Manual or Rotorcraft Flight Manual, as applicable).
- (5) **Appointing ACO** - The ACO which appoints the DER, issues the appropriate credentials, and is responsible for renewal appointments.
- (6) **CAA** - Civil Airworthiness Authority.
- (7) **CAR** - Civil Air Regulation.
- (8) **CFR** - Code of Federal Regulations.

(9) **DAR** - Designated Airworthiness Representatives.

(10) **DAS** - Designated Alteration Stations.

(11) **DER** - Designated Engineering Representatives.

(12) **DER File** - The DER file, maintained at the Branch or Office level, contains the DER Application, Appointment Letter, Renewal Letters, DER activities via FAA Form 8110-3, FAA/DER Interaction Tracking Forms, DER Evaluation Forms and various Records of Discussion or Counseling conducted with the DER.

(13) **DMIR** - Designated Manufacturing Inspection Representatives.

(14) **FAA Advisor** - The FAA Advisor is the engineer/pilot that has the primary responsibilities in the renewal process for the assigned DER's. This Advisor will also be the FAA Evaluator in that technical specialty. If the DER has delegated authority in more than one discipline, the Advisor is responsible for obtaining inputs from the other FAA Evaluators in those disciplines.

(15) **FAA Evaluator(s)** - The FAA Evaluator is the engineer/pilot assigned to a DER which has another technical specialty other than that of the Advisor. The evaluator(s) is responsible to complete the evaluation form for that specialty and coordinate with the FAA Advisor.

(16) **FAR** - Federal Aviation Regulation (Code of Federal Regulations, Title 14).

(17) **HIRF** - High Intensity Radiated Field.

(18) **JAR** - Joint Aviation Requirements.

(19) **Key Interactions** - Refer to the definitions in appendix 3, figure 13, for the definitions of the 8 key interactions identified.

(20) **Key Evaluation Items** - Refer to the definitions in appendix 3, figure 15, for the definitions of the 12 key evaluation items.

(21) **MIDO** - Manufacturing Inspection District Office.

(22) **MRB** - Materials Review Board.

(23) **PMA** - Parts Manufacturer Approval.

(24) **Product** - Aircraft, aircraft engine, or propeller.

(25) **Project ACO** - The geographic ACO with which the DER coordinates when verifying compliance with the REGULATION(S) on certification projects for products and parts.

(26) **RTCA** - Radio Technical Commission for Aeronautics.

(27) **STC** - Supplemental Type Certificate.

- (28) **TC** - Type Certificate.
- (29) **TIA** - Type Inspection Authorization.
- (30) **TIR** - Type Inspection Report.
- (31) **TSO** - Technical Standard Order.
- (32) **VLA** - Very Light Aircraft.

6. DESIGNATIONS AND PRIVILEGES.

a. **Structural Engineering Representatives** may prepare and/or approve, within the limits of their appointment:

- (1) Engineering reports,
- (2) Drawings,
- (3) Materials and processes used in structural applications, and
- (4) Other data relating to structural considerations, provided these items comply with the pertinent regulation(s).

b. **Powerplant Engineering Representatives** may prepare and/or approve, within the limits of their appointment:

- (1) Engineering reports,
- (2) Drawings, and
- (3) Other data relating to powerplant installations, including all systems and equipment necessary for the proper operation of the powerplant, provided these items comply with the pertinent regulation(s).

c. **Systems and Equipment Engineering Representatives** may prepare and/or approve, within the limits of their appointment:

- (1) Engineering reports,
- (2) Drawings, and
- (3) Other data relating to aircraft systems and equipment design not covered by structural or powerplant representatives, provided these items comply with the pertinent regulation(s).

d. **Radio Engineering Representatives** may prepare and/or approve, within the limits of their appointment:

- (1) Engineering reports,

- (2) Drawings,
- (3) Tests, and
- (4) Other data relating to the design and operating characteristics of radio equipment being manufactured and/or modified, provided these items comply with the pertinent regulation(s).

e. Engine Engineering Representatives may prepare and/or approve, within the limits of their appointment:

- (1) Engineering reports,
- (2) Drawings, and
- (3) Other data relating to durability, materials, and processes employed in engine design, operation, and maintenance provided these items comply with the pertinent regulation(s).

f. Propeller Engineering Representatives may prepare and/or approve, within the limits of their appointment:

- (1) Engineering reports,
- (2) Drawings, and
- (3) Other data relating to propeller blade and hub design, pitch control, propeller governing, and maintenance provided these items comply with the pertinent regulation(s).

g. Flight Analyst Representatives may prepare and/or approve, within the limits of their appointment:

- (1) Aircraft performance flight test data,
- (2) Aircraft quantitative operating data, and
- (3) Flight characteristics data provided these items comply with the pertinent regulation(s).

h. Flight Test Pilot Representatives may conduct and approve, within the limits of their appointment, flight tests of new or modified aircraft. The extent and conduct of the overall flight test plan must be coordinated with the Project ACO. Approved flight test plans which are to be conducted by a DER will require the issuance of a TIA.

i. Acoustical Engineering Representatives may witness and approve, within the limits of their appointment:

(1) Noise certification tests conducted in accordance with an FAA approved test plan,
(2) Noise data,
(3) Noise analyses, and
(4) Test results that were measured and evaluated as prescribed in (14 CFR part 36), Subparts B, G, or H, or by an equivalent procedure previously approved by the FAA Office of Environment and Energy (AEE-1).

NOTE: Acoustical DER's may only recommend approval of test plans and final noise certification compliance reports.

7. CATEGORIES.

a. Company DER. An individual may be appointed to act as a company DER for their employer and may only approve, or recommend approval to the FAA, technical data for the company. Company DER's may perform their FAA functions at different administrative levels, as agreed between the FAA and the company. In some cases, a DER may personally evaluate and approve technical data. In other cases, a DER may ensure, through the company management system, the proper evaluation of technical data by other persons; then the DER will approve that data by certifying that the data comply with the applicable regulations.

b. Consultant DER. An individual may be appointed to act as an independent (self-employed) consultant DER to approve or recommend approval of technical data to the FAA for a client. An individual may be appointed to act both as a company DER and a consultant DER; in such case, two separate appointments will be made and separate certificates of delegation issued. The ACO will advise the DER that the employer should be informed of the dual appointment. In the case of dual appointments, the consultant DER delegation may be authorized for areas different from the company DER delegation depending upon the applicant's experience and the limitations the ACO may place on the DER.

8. QUALIFICATION REQUIREMENTS.

a. FAA General Requirements. An applicant for a DER appointment must:

(1) For a company DER, be employed by and recommended by an engineering consulting agency, a manufacturer, an air carrier, or a certificated repair station, and have a position in the employer's organization free from any conflicting restraints but with sufficient authority, either design or flight test, to enable the applicant to administer the pertinent regulation(s) effectively;

(2) For a consultant DER, be self-employed for purposes of the designation. The applicant may also be otherwise employed, and not necessarily in an aviation related occupation;

(3) Have a thorough working knowledge of the pertinent regulations;

(4) Have been in a responsible position in connection with the type of work for which the applicant is to be designated and be entirely cognizant of related technical requirements and problems related to civil aircraft approval or have otherwise demonstrated suitability for this designation;

(5) Possess integrity, sound judgment, and a cooperative attitude; and

(6) Have a good command of the English language, both oral and written.

b. FAA Specific Requirements. A DER applicant, including an applicant that will be acting in a management capacity, must first demonstrate that the individual is technically qualified to act in an engineering capacity on behalf of the Administrator. In order for the DER applicant to establish technical competence in the engineering disciplines applied for, the applicant must:

(1) Have at least eight years of progressively responsible aeronautical, mechanical, civil, electrical or general engineering experience, or satisfactory combinations thereof as appropriate to the designation being sought. If the applicant has an engineering degree, or equivalent, granted by a college of recognized standing, each year of successfully completed course work may be substituted year for year, up to

four years maximum credit, to meet the eight-year experience requirement. An applicant who has not earned an engineering degree may substitute each 40 semester credit hours of successfully completed course work in an engineering, or related, curriculum for one year of experience, up to four years maximum credit, to meet the eight-year experience requirement. In rare instances any portion of the four years experience beyond the engineering degree may be waived by the ACO Manager provided it is based on sound judgment and documented accordingly. An example of this would be the applicant seeking DER flammability delegation. Certain aspects of this authority are very repetitive and do not vary significantly from project to project.

(2) Have at least one year of experience in a direct working relationship with the FAA in which the applicant was continuously and actively engaged in the processing of engineering work for FAA approval of the type in which the applicant is seeking appointment. The experience in direct contact with the FAA, which may be part of the eight-year requirement, should have occurred during the last three years prior to the application for DER appointment. The applicant's experience in obtaining FAA approvals must have been such as to enable the FAA to determine that the applicant is cognizant of the technical requirements the FAA imposes in obtaining such approvals and is well versed in all pertinent regulation(s). The applicant's experience must also demonstrate to the FAA that the applicant is technically competent to successfully solve engineering problems within the scope of the designation requested. Enough variety of work must be processed during the period the applicant worked with the FAA for the FAA to be able to evaluate the applicant's efforts in all areas for which approval is being sought.

(3) For a flight test pilot DER designation, in addition to the requirements of paragraphs 8.b.(1) and (2), must:

(a) Hold a commercial pilot's certificate with instrument rating and be qualified in aircraft of the same category and class and similar in design to that in which the applicant will be conducting tests.

(b) Have logged a minimum of 2,000 pilot-in-command (PIC) flying hours (1,000 hours for helicopters) of which at least 100 hours have been logged within the past 12 months.

(c) Have logged a minimum of 100 hours of appropriate experimental flight testing experience in the same certification category and in a similar type of aircraft for which the DER appointment is requested.

NOTE: The requirements of (b) and (c) are initial requirements, not annual requirements.

(4) For a DER with a delegation of Software Approval, in addition to the requirements of paragraphs 8.b.(1) and (2), should possess:

(a) Comprehensive familiarity with, and understanding of, RTCA Document DO-178(), Software Considerations in Airborne Systems and Equipment Certification.

(b) Familiarity with the systems safety assessment process, specifically, those portions which establish the software criticality levels.

(c) A demonstrated knowledge of the rationale for, and the significance of, each stage in the software development process, as well as its supporting standards, procedures, and documentation. The DER should be able to identify the critical aspects and contents of each of the documents mentioned in DO-178().

(d) Experience gained from participation in some technically responsible capacity over a complete software development program life cycle. This qualification may be satisfied by an aggregate of different software development programs.

(e) Experience interacting with all phases of software development and testing processes addressed by DO-178(), including utilization of the associated configuration and quality control procedures. This experience should include significant responsible involvement in several of those phases. When

assessing an applicant's capabilities for making a knowledgeable finding of compliance, experience obtained in the requirements development or testing phases may, for example, be weighted more heavily than that obtained in the detail design or coding phases.

(f) Fluency in at least one high-level and one assembly-level programming language and familiarity with typical support software used in a software development process. Familiarity with typical software tools available to facilitate the development, documentation, and consistency-checking processes is highly desirable.

(g) Demonstrated knowledge of the sources of software anomalies, the relative merits of the types of testing procedures which are available to protect against them, and the characteristics of a thorough test program.

(h) Familiarity with the aspects of computing peculiar to real-time avionics systems, such as the use of interrupts, multi-tasking, software reentrancy, etc. This should include an appreciation of the types of analysis and testing necessary to ensure the integrity of these mechanisms.

(i) An understanding of the techniques which may be employed to reduce software levels, such as system architecture, multi-version programming, and partitioning. This should include the ability to assess the adequacy of a proposed technique relative to the integrity credit desired.

(j) Knowledge of hardware characteristics such as input/output schemes, memory organization and multi-port access, communication-bus protocols, and processor architecture, all of which have an impact on the software interface and the potential for the creation of anomalies.

(k) The appointing ACO will determine what limitations, if any, will be placed on the DER's software approval level. These limitations may be expressed in the terms used in DO-178() and defined on the DER's FAA Form 8110-25, Certificate of Authority, or related documentation.

(1) A minimum level of successful experience is required by the FAA before a DER is allowed to approve certain software. The experience of the DER to be considered in relation to software level is as follows:

1 Level A Software. A DER should have at least one year of successful experience reviewing Level A software data submittals before being designated to approve any Level A data.

2 Level B Software. A DER should have at least one year of successful experience reviewing either Level A, or Level B software data submittals before being designated to approve any Level B data.

3 Level C Software. A DER should have at least one year of successful experience reviewing software data submittals of either paragraphs 8.b.(4)(1)1 or 8.b.(4)(1)2, or Level C software data submittals before being designated to approve any Level C data.

4 Level D Software. A DER may be designated to approve Level D data if the qualification criteria for appointment as a software DER has been met.

NOTE: Normally, the plan for software aspects of certification and accomplishment summary should be reserved for approval by the ACO.

(5) For a Structural DER with a Delegated Function of Damage Tolerance Evaluation, in conjunction with the education and experience requirements of paragraphs 8.b.(1) and (2), should possess:

(a) As education -

1 A degree in Engineering Mechanics, or

2 A degree in Aerospace/Aeronautical Engineering, or

3 A degree in Mechanical Engineering, or

4 A degree in Civil Engineering.

5 In addition to one of the above, a course in fracture mechanics is desirable, if not taken during the degree program.

(b) As experience - The equivalent of two full years experience in damage tolerance analysis. This experience shall be within the last ten years prior to appointment.

c. State Requirements.

(1) The FAA does not require the DER to meet state requirements for registered professional engineers. The designee function complies with Federal Aviation Regulations and the United States Code. Section 44702(d) (49 USC 44702(d)) authorizes the Administrator to delegate to a qualified private person, a matter related to the examination, testing, and inspection necessary to the issuance of certain certificates.

(2) A DER designation does not relieve designees from requirements imposed by state licensure laws. It is within the regulatory power of a state to restrict the right to engage in the practice of engineering within that state to persons who satisfactorily qualify under its laws, e.g., registered professional engineers. State law may require a consultant DER to be a registered professional engineer when selling engineering services for a fee. Each DER applicant should determine whether the state or states in which the DER applicant intends to offer engineering services requires registration as a professional engineer.

9. APPOINTMENT.

a. Application.

(1) Application for appointment as a DER must be initiated by the applicant or the applicant's employer (in the case of a company DER) by submitting an FAA Form 8110-14, Statement of Qualifications, along with a cover letter to the

manager of the ACO responsible for the geographic area in which the applicant's place of business is located. An example of FAA Form 8110-14 is shown in appendix 3, figures 1 and 2.

(2) The application cover letter must indicate which of the delegated functions and authorized areas are being requested, as shown in appendix 2. It should also include a detailed resume highlighting any FAA certification compliance activity and specifying previous technical work done, including the level of responsibility.

(3) The application will be referred to the appropriate offices in the ACO which will conduct an evaluation of the applicant, including a personal interview.

(4) When a DER changes residence (in the case of a consultant DER), or the employer moves (in the case of a company DER) to another ACO's geographical area, the DER (or company) must re-apply to the new ACO and return the FAA Forms 8000-5 and 8110-25 to the issuing ACO. The application will refer to the DER's previous appointment. The DER should notify the previous appointing ACO so that the ACO can cancel their appointment and transfer any records to the new ACO. If the designee is acceptable to the new ACO, new FAA Forms 8000-5 and 8110-25 will be issued under a new number in accordance with the new certification office's numerical sequence.

b. Appointment outside the United States. The FAA may appoint DER applicants who are not U.S. citizens including those who reside in, or have a primary place of business in another country. Appointing a DER in another country should only be accomplished when such appointment has been determined by ACO management and concurred with by AIR-100 that the appointment would pose no undue burden on the FAA and is advantageous to the FAA. The FAA may not have the necessary resources to monitor their activity. Before appointment of the DER, the appointing office must have the capability and funds to make a minimum of one on-site visit per year to supervise, monitor, train, and track the DER's activity. This requirement can be accomplished concurrently with other FAA activities. Any appointment must have a letter from the Civil Airworthiness Authority (CAA) of that country (addressed to the appointing ACO Manager), stating

that the CAA has no objection to the DER making findings of compliance on aircraft/components located in their country.

c. Selection.

(1) If the applicant is found to be acceptable for an immediate appointment as a DER, a designation will be issued to the applicant by the manager of the ACO or the manager's representative. Such designation is represented by FAA Form 8110-25, Certificate of Authority (see appendix 3, figure 3), and by FAA Form 8000-5, Certificate of Designation (see appendix 3, figure 4). The FAA Form 8110-25 serves as the DER's authorization to act as a representative of the Administrator, while FAA Form 8000-5 serves as a recognition document for the DER. In order to eliminate the necessity for reissuing the FAA Form 8000-5 whenever there is a change in the type of designation, only the title "Designated Engineering Representative" need appear on this form. The specific classifications, specialties, and limitations should be shown on FAA Form 8110-25 and the letter of appointment/renewal which is part of the FAA Form 8110-25. A copy of the appointment letter for each Consultant DER must be sent to the Mike Monroney Aeronautical Center, Engineering and Manufacturing Branch, AFS-610, to provide the information needed for AC 183.29-1(), Designated Engineering Representatives.

(a) If the applicant's qualifications are found to be acceptable except for the requirement of at least one year direct working contact with the FAA, the applicant may be identified as a DER candidate. The ACO manager, or the manager's representative, will issue a letter indicating acceptance of the applicant's qualifications and instructing the applicant on the procedures necessary to complete the requirement for direct experience with the FAA. Three procedures to allow the DER candidate to obtain direct experience with the FAA are described in paragraph (b) below. Other procedures may be adopted or tailored to the needs of the ACO or the applicant.

(b) The DER candidate can use the FAA Form 8110-3, Statement of Compliance With the Federal Aviation Regulations, or the DER Candidate Form as shown in appendix 3, figure 7. This form may not be stocked by the local ACO. It can be copied and enlarged to standard size. It is recommended that colored paper,

other than white, be used to differentiate between this form and the FAA Form 8110-3. One of the following procedures may be used:

1 The DER candidate completes and submits the DER Candidate Form and accompanying data directly to the ACO for their review and approval.

2 The DER candidate completes and submits the DER Candidate Form and accompanying data to a DER having approval authority. Under this procedure, both the DER and the ACO will audit the candidate's progress during the candidacy period. The DER reviews and, if all compliance items are satisfactorily addressed, approves the candidate's work on a FAA Form 8110-3 and submits both forms and the accompanying data to the ACO.

3 The DER candidate prepares the FAA Form 8110-3 and enters the following note in the title box of the form: "The above data has been reviewed by DER candidate..." followed by the printed name and written signature of the candidate. The form and data is submitted to an authorized DER who, when satisfied with the data submittal, approves the submittal by checking the "Approve these data" block, signing in the signature block of the FAA Form 8110-3, and submitting the form and accompanying data to the ACO.

(c) In the procedures of paragraph (b) above, the DER candidate is responsible for reviewing the data for compliance, filling in the appropriate data blocks, checking the appropriate approval blocks, signing the form where indicated, and submitting the form and data to the appropriate person. The DER candidate submittals should be accomplished on actual certification projects. These submittals should be diverse and comprehensive enough for the ACO to determine that the candidate is technically competent to resolve compliance findings within the scope of the designation requested. When the ACO considers the DER candidate fully qualified, the "candidate" term is dropped, the DER is appointed and the appropriate certificates issued.

1 The designation number assigned to the DER will consist of the certification office two- or three-letter prefix followed by a dash and the next appropriate number.

2 In the case of an Acoustical DER appointment, two levels of approval are required. First, the approval of the ACO manager, then the approval of the Director, Office of Environment and Energy, AEE-1, or FAA personnel to whom they have delegated such approval authority. However, technical data approvals and other activities of the acoustical DER will be monitored by the cognizant ACO.

d. Limitations.

(1) A qualified person may be appointed to act as more than one type of DER listed in part 183. The appointee must be personally qualified to determine compliance with the Federal Aviation Regulations in all authorized areas and delegated functions assigned from appendix 2. A delegated function applies to the technical areas involved in determining compliance with applicable airworthiness regulations. An authorized area applies to the specific portion or system of the aircraft or the type of engine or propeller or specialized area to which a delegated function is applicable. The delegated functions and authorized areas for each DER will be established from the appendix 2 charts prior to the time of the applicant's original appointment, and again during review at the DER's renewal date. These will be listed on FAA Form 8110-25, the letter of appointment, and on any letter(s) of renewal or authority expansion/deletion. Any other limitations appropriate to the appointment, such as certain CAR or regulation(s), are also listed on the form.

(2) The delegation of a specific Federal Aviation Regulation also includes the delegation for predecessor and other applicable regulations, e.g.,

(a) The delegation of 14 CFR part 25 includes Civil Air Regulation part 4b, etc.

(b) The delegation of 14 CFR part 23 includes Civil Air Regulation part 3, JAR/VLA, and the airworthiness standards accepted for Primary Category airplanes, etc.

(c) The delegation of 14 CFR part 27 includes the airworthiness standards accepted for Primary Category rotorcraft.

(3) A DER may be appointed for, or limited to, specific types of work. For example, a systems and equipment DER could be limited to handling approval of alterations to specific types of systems such as hydraulic, pressurization, etc., on only one airplane model; or a flight test pilot DER could be limited to conducting flight tests on fixed wing aircraft of a specified maximum gross weight. The scope of the designation, and any limitation considered necessary at the time of appointment, will be clearly indicated on FAA Form 8110-25 or other related documentation. However, caution should be exercised in making delegations so narrowly limited that they become burdensome to the FAA.

(4) The FAA retains authority and responsibility for examining and approving certain types of technical data, e.g., the certification basis, any special conditions, exemptions, equivalent safety findings, test plans, type inspection authorizations, TC, STC, AFMs, service bulletins resulting in ADs, alternate means of compliance to ADs, PMA, TSO etc. This retention limits the data that the DER can approve. Appendix 1, Typical Limitations on DER Functions, lists those areas which DER's normally may or may not approve. The level of data approval granted to the DER may vary from project to project depending on the complexity of the project; therefore, the appointing ACO manager or manager's representative may issue a special authorization letter to permit a DER to approve data normally reserved to the FAA. The special authorization letter must be specific in its delegation, limited in its duration, and is valid only at the ACO which issued the letter. Verbal authorization from the ACO is permitted in some cases (e.g., witnessing tests) provided it is documented on the subsequent Form 8110-3.

(5) A DER may be appointed to approve technical data not specifically listed in the charts of appendix 2. Each chart has an authorized area of "Special" with delegated functions to cover this contingency. FAA Form 8110-25 or related

documentation will list the authorized area of "Special" with the delegated function specifically defined.

(6) A qualified person may be appointed as an administrative coordinator or as a manager of an applicant's certification program. This person will be assigned the authorized designation of Administrative DER or Management DER. These special designations encompass all technical disciplines; therefore, they may not be associated with a particular chart in appendix 2. These designations relieve the FAA from having to do the normal project administration, technical coordination, and guidance usually associated with a certification program.

NOTE: An Administrative or Management DER is not recognized in section 183.29 and as such applicants should meet the requirements for appointment as a technical DER before being granted an Administrative or Management DER delegation to act as a representative of the Administrator or make findings of compliance to airworthiness requirements.

(a) Administrative DER. The Administrative DER acts as a focal point for FAA coordination activity including organizing technical DER activity, correspondence, schedules, meetings, FAA participation in official tests, and conformity. When this DER is appointed as the coordinator or check-point for other DER's work, the DER should be assigned the authorized area of "Special-Administrative" with the delegated function of "DER Coordination."

1 An applicant for an Administrative DER must meet the qualification requirements as in paragraph 8.a. and b. above plus have significant experience in direct contact with the FAA in which the applicant has been actively engaged in processing FAA approvals. This experience must enable the FAA to determine that the applicant is cognizant of the overall certification process, and the administrative problems encountered in obtaining approvals. When the ACO has documented that an equivalent finding has been made that demonstrates that the applicant meets the intent of paragraph 8.b, the ACO manager may at his/her discretion appoint an applicant that does not meet all of the (requirements of paragraph 8.b. as an Administrative DER.

2 An Administrative DER will perform the following functions:

(aa) Be a focal point of contact and coordination for FAA certification activities.

(bb) Assure that all data submitted are properly organized, identified, coordinated, and if appropriate, approved by an appropriately rated technical DER.

(cc) Assure that all data are forwarded to the FAA in sufficient time to allow FAA review prior to conformity, testing, TIA issuance, etc.

(dd) Ensure that the DER's FAA Forms 8110-3 are correctly completed (including the listing of the applicable regulations and appropriate signatures) and when discrepancies are found, return the data to its originator for evaluation and for correction.

(ee) Provide the FAA with regular status reports on all open projects, including: schedules, conformity requirements, upcoming tests (Company or FAA), technical problems/issues, etc. and inform the FAA as soon as possible of any project or priority changes which may impact the certification effort.

(ff) Establish a Certification Plan/Compliance Checklist early in the program, coordinate it with the technical DERs, update it periodically, and submit it to the FAA for approval.

(gg) Support and coordinate FAA's requests for information on accidents and service difficulties with the appropriate disciplines and to provide follow-up information.

(b) Management DER. The Management DER performs FAA certification project management duties for the FAA. In this capacity, the DER performs duties similar to the FAA program manager. This includes organizing the certification program:

directing, overseeing, and managing the task of technical assessments and findings of compliance. This DER assures that all technical data required to show compliance is reviewed and approved by the appropriate DER except in those areas reserved to the FAA for approval. When this DER is appointed to perform FAA certification project management duties for the FAA, the DER should be assigned the authorized area of "Special-Management" with the delegated function of "DER FAA Certification Management."

1 Applicants for a Management DER must meet the qualification requirements as in paragraph 8.a. and b. above plus have significant experience in direct contact with the FAA in which the applicant has been actively engaged in processing FAA approvals and has demonstrated their technical DER knowledge over a variety of FAA projects. This experience must enable the FAA to determine that the applicant is cognizant of the overall certification process, has experience working with other technical disciplines, and is cognizant of the management problems encountered in obtaining approvals.

2 A Management DER will perform the following functions:

(aa) Perform FAA certification project management duties for the FAA. The Management DER may use other DERs to accomplish the Federal Aviation Regulation type design compliance reviews and to make the specific technical findings. The Management DER must assure that properly authorized, competent and reliable DERs are accomplishing the certification compliance review work.

(bb) Assure that a Certification Plan (if appropriate) is formulated early in the program. This plan will show all necessary steps and milestones arranged in their proper and logical order. The plan will be coordinated with the applicant and the FAA Program Manager.

(cc) Advise the FAA of any design features which might require special conditions, exemptions, equivalent safety findings, any unsafe features or characteristics, etc.

(dd) Determine that all necessary findings of compliance with applicable regulations have been accomplished by the technical designees involved. The Management DER must provide evidence to the FAA, by a method agreeable to the FAA, that he or she has verified that the data submitted have been reviewed by all appropriate specialist DERs and found acceptable as identified on their individual FAA Form 8110-3.

(ee) When requested prepare minutes of FAA/applicant meetings, coordinate draft with the appropriately rated DERs and specialists, and submit to the FAA for concurrence. When appropriate, prepare draft conformity requests and a draft TIA, coordinate drafts with the appropriately rated DERs and specialists and submit to the FAA for review and issuance.

(7) The FAA does not authorize any DER to use the DOT or the FAA logo on such things as business cards, letterheads, facsimile covers, document covers or any other business forms. Title 49, section 3.5(b) of the Code of Federal Regulations prohibits the use of the DOT logo unless specifically authorized in writing. This regulation also prohibits the use of the DOT logo on any letterhead other than U.S. Government letterhead.

e. DER Indemnification Status. A DER, while acting pursuant to a DER appointment, is a representative of the Administrator for specified functions. A DER is not an employee of the FAA, nor of the United States of America, and is not federally protected for the work performed or the decisions made as a DER. As private individuals, DER's are subject to general tort law. The company DER should consult their employer for company policy regarding indemnification. The FAA cannot shelter or protect the DER from the consequences of the DER's findings.

f. DER Guidance Material.

(1) When a new DER or a candidate is appointed, the appointing ACO will submit two copies of FAA Form 1770-7, DMIR/DER MAILING LIST ACTION REQUEST, to the FAA Regulatory Support Division, Engineering and Manufacturing Branch, AFS-610.

The required information should be submitted on the FAA Form 1770-7 (appendix 3, figure 5) in the following manner:

(a) In the upper left-hand corner (labeled "ORGANIZATION"), place the routing symbol of the appointing organization.

(b) In the upper middle section, mark the block labeled "ADD".

(c) In the upper right-hand corner (labeled "DATE"), enter the date of the request.

(d) If the DER is self-employed, the section labeled "NEW" should be filled out as follows:

1 Line 1: FDR-2.

2 Line 2: The DER's name (two initials and last name only) and DER number (or the note "DER Candidate" as appropriate).

3 Line 3: Leave blank.

4 Line 4: Street address.

5 Line 5: City, State, Zip Code.

6 Leave the section labeled "OLD", blank.

(e) If the DER is employed by a company, the section labeled "NEW" should be filled out as follows:

1 Line 1: FDR-2.

2 Line 2: The legal company name.

3 Line 3: The DER's name (two initials and last name only) and DER number (or the note "DER Candidate" as appropriate).

4 Line 4: Street address (company mail stop optional).

5 Line 5: City, State, Zip Code.

6 Leave the section labeled "OLD" blank.

(2) After the completed copies of FAA Form 1770-7 are received by AFS-610, the new DER or candidate DER will receive a guidance material kit which contains regulatory and technical information, and will be placed on a mailing list to receive subsequent material. The following documents will be included in each guidance material kit shipped from the U. S. Department of Transportation warehouse:

(a) Federal Aviation Regulations (14 CFR):

Part 1 Definitions and abbreviations
Part 11 General rule-making procedures
Part 21 Certification procedures for products and parts
Part 23 Airworthiness standards: normal, utility, acrobatic, and commuter category airplanes
Part 25 Airworthiness standards: transport category airplanes
Part 27 Airworthiness standards: normal category rotorcraft
Part 29 Airworthiness standards: transport category rotorcraft
Part 31 Airworthiness standards: manned free balloons
Part 33 Airworthiness standards: aircraft engines
Part 34 Fuel Venting and Exhaust Emission Requirements for Turbine Engine Powered Airplanes
Part 35 Airworthiness standards: propellers
Part 36 Noise standards: aircraft type and airworthiness certification
Part 39 Airworthiness directives
Part 43 Maintenance, preventative maintenance, rebuilding, and alteration
Part 45 Identification and registration marking
Part 91 General operating and flight rules

Part 121 Operating requirements: Domestic, flag,
and supplemental operations.
Part 125 Certification and operations: Airplanes
having a seating capacity of 20 or more passengers
or a maximum payload capacity of 6,000 pounds or
more
Part 127 Certification and operations of
scheduled air carriers with helicopters
Part 129 Operations: foreign air carriers and
foreign operators of U.S. registered aircraft
engaged in common carriage
Part 133 Rotorcraft external-load operations
Part 135 Air taxi operators and commercial
operators
Part 183 Representatives of the Administrator

(b) FAA Orders:

WA 0000.4() Washington Headquarters
Directives Checklist
8000.51 Aircraft Certification Directorates
8040.1 Airworthiness Directives
8100.5 Aircraft Certification Directorate
Procedures
8110.4() Type Certification Process
8110.37() Designated Engineering
Representatives (DER) Guidance Handbook
8130.24 Procedures for the
Termination/Nonrenewal of Aircraft
Certification Service Designations and
Delegations
8110.42() Parts Manufacturer Approval
Procedures

(c) FAA Advisory Circulars:

AC 00-2.() Advisory Circular Checklist
AC 00-44() Status of Federal Aviation
Regulations
AC 20-126() Aircraft Certification
Service Field Office Directory

AC 21-15() Announcement of Availability --
Aircraft, Aircraft Engines, and Propeller
Type Certificate Data Sheets and
Specifications
AC 39-6() Announcement of Availability --
Summary of Airworthiness Directives
AC 183.29-1() Designated Engineering
Representatives

NOTE: The symbol "()" indicates a frequently revised document. The latest revision will be included in the kit and new revisions mailed out as published.

(3) All necessary forms, instructions, and other material not in the guidance material kit should be provided by the appointing ACO at the time of orientation. Any DER's request for additional material not in the kit may be sent to the appointing ACO or to the project ACO, if different from the appointing ACO.

(4) Whenever a current DER has a change of address, a designation is canceled, or a designation expires, the appointing ACO must submit two copies of FAA Form 1770-7 to AFS-610 to ensure the DER mailing list is kept current. Use the following guidelines when submitting an FAA Form 1770-7 for a change of address or cancellation:

(a) For a change of address, complete the form as outlined in (1) above except as follows:

1 In the upper middle section, mark the block labeled "CHG."

2 In the section labeled "NEW", indicate the DER's new address using the same format outlined in (1) above.

3 In the section labeled "OLD", indicate the DER's former address as it appears on the mailing label used by the U. S. Department of Transportation, Subsequent Distribution Office, M-483.6.

(b) To remove a DER's name and address from the mailing list, complete the form as outlined in (1) above except as follows:

1 In the upper middle section, mark the block labeled "DROP."

2 Leave the section labeled "NEW" blank.

3 In the section labeled "OLD", indicate the former DER's name and address as it appears on the mailing label used by the U. S. Department of Transportation, Subsequent Distribution Office, Ardmore East Business Center, 3341 Q 75th Avenue, Landover, MD 20785,M-443.2.

(5) Some of the required publications or documents needed by the DER may be obtained by the DER through **FedWorld**. **FedWorld** is an electronically accessible information database that contains many current FAA publications such as safety data, airworthiness regulations, Orders, Notices, Advisory Circulars, and Airworthiness Directives. **FedWorld** provides an optional means of obtaining the required information to conduct the DER functions. **FedWorld** is maintained by the National Technical Information Service (NTIS), an agency of the U.S. Department of Commerce. DERs who want documents may obtain them through **FedWorld**.

(a) Specific regulation(s), Orders, and Advisory Circulars required to perform specific functions are reflected in paragraphs 9f(2)(a), (b), and (c) of this order. This list reflects the minimum documents needed for certification activities. Other related regulations and policy can be obtained through **FedWorld**, the appointing ACO, the U.S. Government Printing Office, or U.S. Government Bookstores.

(b) Connection to **FedWorld** may be made as follows:

1 By Modem. Set modem parity to none; data bits to 8; and stop bit to 1. Set terminal emulation to ANSI. Set duplex to full. Then dial **FedWorld** at (703) 321-3339.

2 By Internet. Telnet to fedworld.gov(192.239.92.201). For File Transfer Protocol (FTP) services, connect to ftp.fedworld.gov(192.239.92.205). On the World Wide Web, connect to **http://www.fedworld.gov**.

3 After connecting with **FedWorld**, follow the prompts for "Regulatory...", then "Regulatory Mall", then select the "FAA Library of files". For FTP select "pub" then "faa". For WWW select "FedWorld FTP Site" then select from the "FAA Library of Files".

10. ORIENTATION. The appointing ACO manager or representative is responsible for the initial orientation of a newly appointed DER, or candidate DER, in conjunction with the FAA personnel with whom the DER will be working. For a DER appointed in more than one discipline, appropriate orientation will be given in each area. The initial orientation should include the following items:

a. Certification Directorate Structure. Review organizational structure of the certification directorate system.

b. ACO Structure. Review ACO organizational structure.

c. Personnel. Introduce the DER to ACO personnel, if orientation is given in the ACO.

d. Approval Authority. Review in detail what the DER can approve and what may only be recommended for approval.

e. DER Guidance Handbook. Review in detail, Order 8110.37B, Designated Engineering Representatives (DER) Guidance Handbook.

f. FAA Form 8110-3. Explain how to fill out FAA Form 8110-3 (see appendix 3, figure 6 and paragraph 17). Give the DER a supply of the forms.

g. Use of Authority. Advise the DER to exercise the full extent of delegated authority. If the DER does not exercise the delegated authority, the DER must explain why on the FAA Form 8110-3, when submitted.

h. Test Plan Approval. Emphasize that a DER cannot approve test plans but should recommend approval in the submittal to the ACO. The ACO may delegate test plan approval on a case-by-case basis. The DER must have specific approval from the FAA prior to witnessing a test as the FAA representative.

i. Operating Boundaries. Explain procedures for operating across ACO boundaries.

j. Appointment and Renewal Procedures. Explain appointment and renewal procedures.

k. Relocation Procedures. Explain steps that must be taken if the DER moves to an area for which another appointing ACO is responsible.

l. Meeting Minutes. Review minutes of recently held DER workshops/conferences and provide copies as appropriate.

m. Other Pertinent Information. Review other pertinent information, i.e., ACO STC Application Guide, material burn requirements, applicable AC's, TC handbook, service difficulties, major and minor changes, etc. Provide the DER with copies of information of particular interest to the appointment specialty.

n. Questions Concerning Approval Authority. Emphasize that if the DER has any doubts about the approval authority or questions on any subject, the DER should contact the appropriate manager or representative in the ACO.

o. Company Influence. Advise all company DER's or consultant DER's who are acting like a company DER to contact the appointing ACO immediately if any pressure is put on the DER by their company's management to approve data that the DER believes should not be approved.

p. Administrative Responsibilities. Familiarize the DER with all necessary administrative procedures, practices, and official records, and provide the DER with all pertinent forms and instructions. This does not necessarily involve a review of the DER's technical qualifications or the DER's familiarity with

pertinent regulations since the DER's capability in these areas was a basis for the appointment.

q. Training. Advise the DER that the FAA expects the DER to participate in periodic seminars or training furnished by the FAA as an aid in maintaining currency in FAA policy and procedures. The DER will be notified of seminars, when appropriate. A newly appointed DER must attend a DER Standardization Seminar within one year after initial appointment.

r. Compliance with Policy. Explain that a DER is expected to use and implement FAA policy and guidance material (ACs, notices, orders, etc.) in addition to the regulations.

11. DER OVERSIGHT. DER Oversight as part of the DER management system is the process of documenting and tracking each key interaction, or a combination of key interactions, in a practical, consistent, credible, maintainable, and flexible manner.

a. The eight key interactions of DER oversight are:

(1) development of certification plan/compliance checklists,

(2) identification and resolution of significant technical issues,

(3) review and approval of compliance data,

(4) involvement in project management/administration,

(5) review and approval of repair/alteration data, including process specifications [activities in support of FAA Form 337, repair stations, etc.],

(6) investigation and resolution of significant service difficulties,

(7) participation in technical exchanges [meetings and telecons on general technical subjects], and

(8) participation in FAA training/seminars.

b. The DER will be informed of any performance concern and given the opportunity to improve, assuming the concern was not so serious as to merit immediate certificate of delegation cancellation or non-renewal. Each Branch/ACO will assign an engineer as the responsible FAA Advisor for each DER. In addition, for DERs with multiple disciplines, an FAA Evaluator will be assigned in the other coordinating ACO/Branch(es). The time spent on the renewal process for each individual DER by the Advisor/Evaluator is direct function of the frequency of interface during the year and may require only a brief review of the DER's file and DER/FAA Interaction Tracking Form to evaluate performance.

12. RENEWAL POLICY. The DER is required to complete and submit the DER/FAA Interaction Tracking Form (appendix 3, figures 12 and 13). The renewal cycle cannot be completed until this form is received. The DER Performance Evaluation Form (appendix 3, figures 14 and 15) will be completed by FAA personnel.

a. DER's will be required to summarize Key Interactions on a yearly basis. As indicated on the Interaction Tracking Form, the DER is required to provide a brief summary of the previous year's activities. The primary individual FAA engineering contacts, by name, should also be included. This summary should include all FAA contacts in which the DER has designations. Detailed project information or design details that may be considered proprietary should not be included. The submittal of the properly completed Tracking Form is required before the DER appointment can be renewed. Since the form must be submitted before the DER's delegation can be renewed, the FAA is assured of being informed of key interactions. The method is flexible in allowing the ACO to establish the appropriate level of review.

b. The FAA is required to complete a DER Performance Evaluation Form every year, prior to renewal of the DER's appointment. The completed form will be retained in the DER file to document performance and, possibly, to be used as the basis for a non-renewal decision.

(1) The evaluation may not necessarily involve a detailed examination of the DER's work completed during the review period. The evaluator may rely on as many or as few sources as believed necessary to make assessments. Examples of sources that the evaluator may use include personal experience, performance or conduct notes, input from other FAA employees, input from the DER/FAA Interaction Tracking Form, and review of selected DER submittals.

(2) The appropriate FAA engineer in each discipline will complete the evaluation form. The FAA engineer will be asked to respond to twelve performance elements, focused primarily on the qualities and qualifications necessary to gain initial appointment as a DER. Areas where the FAA will be required to make an assessment of the DER's performance include demonstration of technical competence, adherence to DER procedures, and timely identification of significant issues.

(3) The twelve evaluation items are:

- (a) Activity Level;
 - (b) Direct FAA Contact;
 - (c) DER/FAA Interaction Form;
 - (d) Application of regulations, policy, and guidance;
 - (e) Adherence to DER procedures;
 - (f) Integrity, sound judgment, cooperative attitude;
 - (g) Technical competence in area of appointment;
 - (h) Attendance at required training;
 - (i) Ability to communicate clearly;
 - (j) Quality of submittals;
 - (k) Timely identification of significant issues;
- and
- (l) Timely submittal of data.

(4) The purpose of the evaluation is to establish that the DER is performing at the satisfactory level, or to take corrective action if this is not the case. The FAA Advisor will coordinate with all FAA Evaluators and obtain completed FAA Evaluation Form(s) before initiating the renewal.

13. RENEWAL. The DER appointments are issued for a period not to exceed one year in accordance with section 183.15b of the Federal Aviation Regulations. At the discretion of the Administrator, the appointment may be renewed annually provided the DER's performance is satisfactory.

a. Renewal procedure. Approximately 60 days prior to a DER renewal, the ACO and/or Branch will send a DER/FAA Interaction Tracking Form to each DER with instructions for completion and request that the tracking form be returned within 30 days to the appointing branch and/or office.

NOTE 1: Blank Interaction Tracking/Evaluation Forms may be sent to the DERs, when requested, at the beginning of the renewal period for their use and reference during the year. Both forms may also be sent to each DER with the initial "Appointment Letter."

NOTE 2: If a DER is both a company and a consultant DER, two Interaction Tracking Forms should be sent to the DER for completion and submittal to the FAA for the renewal evaluation.

NOTE 3: If a DER is a company or consultant DER, a single Interaction Tracking Form should be sent to the DER for completion. The DER should address all delegations (Airframe, Propulsion, etc.) on the same tracking form.

NOTE 4: On-going evaluations of candidates should be accomplished. The renewal process does not apply to candidates.

(1) The DER's files should be evaluated for acceptable activity level, notes on submittals, consultation letters, or any correspondence that would suggest the need for a more critical review. The FAA Advisor/Evaluator for each DER should be cognizant of that DER's activities, within his or her discipline, during the previous year.

(2) The DER's previous year activity will be compared to his or her delegated functions and authorized areas to ensure that no activity is outside their authorization. All FAA

Engineering notes on the submittal, letters accepting or rejecting data, records of counseling sessions, etc., should be reviewed and discussed with the cognizant FAA Evaluators, if appropriate, to insure that the evaluation accurately reflects the DER's performance during the previous year.

(3) If the DER has approval authority in more than one discipline, a copy of the completed Tracking Form will be supplied by the Advisor to the Evaluator(s) in each discipline.

(4) The Evaluator in each discipline will complete a DER Performance Evaluation Form, make a recommendation for renewal or non-renewal, and sign and date the form. The DER renewal package, with the completed evaluation form from each discipline, will be returned to the Advisor for further processing.

(5) If the DER has made submittals to more than one ACO during the previous year, the Evaluator will coordinate the evaluations with engineers or pilots in those ACO. Only one "official" DER Performance Evaluation Form will be included in the renewal package for each authorized discipline.

b. Completion of the Evaluation Form. If performance is anything except satisfactory in any area, the FAA Evaluator will indicate in the **"REMARKS"** section any actions necessary to resolve the concern. The DER will be contacted for any indication except satisfactory. The renewal may be made with the other-than-satisfactory marks if justified by adequate resolution.

NOTE: Only the DER and other FAA ACO Employees may be contacted in the course of completing the Performance Evaluation Form.

(1) The "Not Observed" (N/OB) choice will be used to indicate that neither the evaluator nor the persons who may have been surveyed, including the DER, are aware of activity in the area being evaluated. For example, it is very possible that the DER may not have been involved in the identification of significant issues during the review period. In this case, the "Not Observed" choice is appropriate and would not affect the

renewal recommendation. An appropriate comment will be made in the "Remarks" section.

(2) If personal contact with the DER is necessary to resolve a significant performance problem, the "Remarks" section of the Evaluation Form should identify the method of resolution agreed upon by the Evaluator/DER of each issue raised. The DER should sign the Evaluation Form verifying his/her concurrence or the resolution will be documented in a letter to the DER.

(3) If the FAA Evaluator believes the DER is not performing at a satisfactory level in a number of areas, if the problem continues from year to-year, or if the deficiency in a given area is especially serious, the Evaluator may recommend that the DER appointment not be renewed, or that the delegation in that particular discipline be eliminated. The Evaluator must contact the DER at this point and must be prepared to provide the documentation necessary to sustain a non-renewal or reduction of authorization. If non-renewal is based on inactivity, the DER file must have evidence that the DER has been previously cautioned that lack of activity may result in non-renewal of the authorization. The Evaluator should coordinate the above concerns with the Advisor and appropriate Branch and/or Office Manager for final resolution. Reference paragraph 14 for termination and paragraph 15 for termination procedures.

(4) Under the Freedom of Information Act (FOIA) (5 USC 552), releasability of the Tracking Form and the Evaluation Form have been reviewed by Office of the Chief Counsel with the following observations:

(a) Both the blank DER Tracking Form and the blank Performance Evaluation Form are categorically available to the public. However, public availability of the completed and submitted tracking form and performance evaluation form is dependent upon the information submitted on the completed form and requires a case-by-case review.

(b) Based on a review of the DER Tracking Form, attached directions, and discussion in the DER Oversight Report, it appears that the type of information sought and provided in the body of the tracking form is basically factual, amounting to

an accounting of the number and type of interactions between the DER and the FAA. As such, the information is NOT the type that normally would qualify for any exemption under the act. However, there may be rare instances where a DER includes explanatory information or supportive or supplemental documents, such as plans or drawings, that may be considered proprietary. Under those circumstances the proprietary information may qualify for protection under Exemption 4 (trade secret or commercial information disclosure of which would significantly harm submitter/corporation's competitive position). It is expected that such an occurrence to be the exception, rather than the rule.

(c) The completed DER Performance Evaluation forms typically are protected under Exemption 6 of the FOIA (disclosure would result in a clearly unwarranted invasion of personal privacy) so long as the individual DERs are identifiable. If the FAA receives a request for a number of DER evaluations and are able to delete the names and DER numbers so that a specific DER cannot be identified, then the completed forms should be released after retracting the identifying information. On the other hand, if a requester seeks the evaluation of a specific DER, then the evaluation may be protected under Exemption 6.

c. FAA action.

(1) After adequate feedback has been provided by the other engineering disciplines, the DER/FAA Interaction Tracking Form is signed by the Advisor after verification that all required evaluation forms have been returned and are adequate.

(2) If there is no change in Approval Status, the Advisor will initiate coordination within the office to issue the Renewal Letter to the DER. The complete DER renewal package with the DER/FAA Tracking Form, the DER Performance Evaluation Form(s), and the signed renewal letter will be placed in the DER's file.

(3) A new FAA Form 8110-25 or a renewal letter will be issued prior to the expiration date of the current FAA Form 8110-25 unless the DER's file shows reasons, in writing, for

termination of the DER's certificate. The ACO may, at its option, issue a letter (see appendix 3, figure 8) to renew in place of issuing a new FAA Form 8110-25. The letter of renewal and the existing FAA Form 8110-25 will provide the authorization for the DER to continue certification activities for up to one additional year.

14. TERMINATION. Section 183.15(d) lists specific reasons for terminating a designation, and allows the FAA the discretion to rely on any other reason it considers appropriate. The following list of reasons for termination or non-renewal includes those listed in section 183.15(d)(1) through (5) and additional reasons considered appropriate under section 183.15(d)(6):

a. At the written request of the DER or the DER's employer.

b. In the event the company DER leaves the employment of the company that requested the designation.

c. Upon a finding by the Administrator that the DER has not properly exercised or performed the duties of the designation, i.e., misconduct by the DER in accordance with section 21.2.

d. Upon a finding by the Administrator that the DER has not had sufficient activity to warrant continuance of the designation.

e. Upon a finding by the Administrator that the DER's specific qualifications have lapsed.

f. Upon a finding by the Administrator that the DER has not demonstrated the care, judgment, or integrity required for proper exercise of delegated authority.

g. In the event the DER becomes a staff member of a DAS, an SFAR 36 Repair Station, or a Delegation Option Authorization (DOA) holder, a DER must recognize that engineering activities as a DER and as a member of the engineering staff of any of these designated organizations are separate and distinct functions. As an engineering member of one of these organizations, the DER does

not exercise the delegation. There may be instances, not related to designated organizational activities, where the organization's personnel can use their company or consultant designations; therefore, the DER delegation will not be terminated automatically when the DER is employed by one of these organizations, but will be reviewed for possible retention.

h. For any other reason the Administrator considers appropriate.

15. TERMINATION PROCEDURES. FAA Order 8130.24, Procedures for Termination/Nonrenewal of Aircraft Certification Service Designations and Delegations, describes the procedures to be followed in terminating or not renewing DER designations. The following are additional considerations for these actions.

a. The procedures applicable to DER's for giving notice of termination or nonrenewal and granting reconsideration for renewal are as follows:

(1) If the termination or nonrenewal is based on insufficient activity at the company (production approval holder, supplier, or engineering organization), or on DER misconduct condoned by the company, notice will be given only to the company. Only the company may request reconsideration; the individual DER employed by the company may not.

(2) If the termination or nonrenewal is based on misconduct of a consultant DER, notice will be given to the DER. The DER may appeal the action.

(3) If the termination or nonrenewal of a company DER is based on misconduct not condoned by the company, notice will be given to the DER and the company. Only the DER may request reconsideration. If the DER wishes, it is permissible to have the company participate in the appeal.

(4) If the designation is terminated or not renewed at the request of the DER's company, the procedures concerning reconsideration of the termination/nonrenewal do not apply. The decision to employ a DER is entirely within the discretion of the company or individual.

b. The company and/or an individual DER must be notified in writing of the reason(s) for any decision to terminate or not renew. The notification should be sent 30 days in advance of the intended effective date.

(1) The reasons to terminate or not renew should be as specific as possible, and cite handbook guidelines. Any unacceptable conduct should be cited.

(2) The written notification should give the DER or the company the option to respond in writing or in person. The notification should allow a maximum of two weeks from the date of notification for the addressee to respond. If the DER or the organization chooses not to respond, the termination or non-renewal should be processed.

(3) The notification should advise the DER that if the DER responds in person, a record of the meeting with the DER will be made. The notification should also inform the DER that the DER may be accompanied by counsel if the DER so chooses.

c. If a meeting with the DER is held, the meeting will be with the appointing ACO Manager and the project engineer(s)/pilot(s) who recommended the termination or nonrenewal. The FAA will maintain a record of the meeting: either shorthand notes taken by a secretary, a summary written up after the meeting, or a verbatim record taken by a court reporter. If the record consists of shorthand notes or a summary, a copy of the write-up should be sent to the DER to review and submit any proposed corrections.

d. The decision regarding the proposed action should be in writing from the ACO manager. When the decision is made to terminate or not renew a designation, the letter should restate the reasons and recite the justification for the decision, regardless of whether the DER or organization responded in writing or in person. The letter should give the DER or organization the opportunity to request reconsideration by the manager of the appropriate geographic directorate. At the option of the DER or organization, the reconsideration can take the form of review of material submitted by the DER or organization and

terminating office, or another informal hearing at the manager's office, with a record being kept as described above.

e. If, after review at the directorate level, the directorate manager concurs with the decision to terminate or to not renew, the directorate manager will send a letter, certified mail/return receipt requested, to the DER or organization containing the decision and reciting the justification. The letter should also advise the DER that the decision is final and that the remaining legal remedy is as provided in FAA Order 8130.24, Procedures for Termination/Nonrenewal of Aircraft Certification Service Designations and Delegations.

f. In any case where a DER is suspected of fraud or other activity for which emergency action is necessary to ensure safety, the ACO will immediately direct the DER to cease all further certification activity pending FAA investigation of the matter. Following a finding of a fraudulent or unsafe activity, the ACO shall initiate termination action.

g. ACO personnel shall coordinate all contemplated termination actions for cause with the geographical Aircraft Certification Directorate Manager and the appropriate Assistant Chief Counsel prior to the initiation of such action. The geographical Aircraft Certification Directorate should monitor implementation of such actions and should evaluate performance and overall management of the DER program.

16. RESPONSIBILITIES AND ADMINISTRATION.

a. General.

(1) The DER may participate in the various phases of an engineering investigation including: an approval for a type certificate, a change in type design project, an approval for a supplemental type certificate, and on data approval for major alterations and repairs. Approval of the engineering technical data on FAA Form 8110-3 means that, within the limits of the DER's authority, the DER has determined that the data complies with all pertinent regulation(s) requirements.

(a) In approving engineering data within the DER's limits of authority, the DER is finding compliance with appropriate FAA airworthiness requirements. These requirements include, but are not limited to, Federal Aviation Regulations, Special Federal Aviation Regulations (SFAR), special conditions, exemptions, and other requirements that have been adopted or accepted by the FAA such as the Joint Aviation Requirements for very light aircraft (JAR-VLA).

(b) Whenever any question arises regarding interpretation of a Federal Aviation Regulation or the use of new or unconventional materials and process, the DER shall consult with FAA ACO personnel. The DER shall not make an interpretation of a regulation. In general the DER should be guided by existing procedures policies, specifications, processes, standards, etc. The DER must consult with the ACO prior to departure from existing procedures in making findings of compliance.

1 The decision as to whether a change and/or modification is major or minor should be reviewed with the ACO if the decision is controversial or if the DER needs guidance.

2 The extent and effect of a major or significant modification shall be discussed with the ACO to determine if original design requirements (airworthiness regulations, basic load criteria, test results) still apply, if the original application for type certificate will be affected, and if additional analysis, flight tests, ground tests, or ground inspections are necessary.

(c) The DER may use as many experienced engineers as needed to completely evaluate engineering technical data; however, the DER accepts the responsibility for approving the technical data when signing the FAA Form 8110-3. A DER may decline to approve any or all portions of the technical data, and may forward such data to the FAA for approval. In such instances, the DER must specify reasons for not approving the technical data. A DER should communicate early and often with the FAA counterpart.

(2) The DER can assure that all certification requirements have been addressed by utilizing a compliance checklist. When a compliance checklist is generated for a type certification or supplemental type certification program, each DER involved in the process should review the checklist to ensure that all compliance requirements are identified and satisfactorily complied with prior to type certification.

(3) A DER, within the scope of the appointment, is authorized to approve technical data or perform functions respecting examinations, inspections, or tests necessary to the issuance or amendment of a type certificate, an STC, changes in type design, etc. These approvals are accomplished by completing FAA Form 8110-3. The specific role, authorized area, and responsibility the DER has in performing these functions may be established by agreement between the ACO and the DER. These functions or authorized areas may include, but are not limited to, the following:

(a) Participation as an advisor to the type certification board.

(b) Approval of production and service changes to a model which is type certificated provided the DER determines that the modified model continues to comply with applicable regulations and standards. Production changes are defined as changes incorporated during original manufacture; whereas service changes are defined as changes incorporated after original manufacture. The decision as to whether a change and/or modification is major or minor should be reviewed with the ACO if the decision is controversial or if the DER needs guidance. The extent and effect of a major or significant modification shall be discussed with the ACO to determine if original design requirements (pertinent regulation(s), basic load criteria, test results) still apply, if the original application for type certificate will be affected, and if additional analysis, flight tests, ground tests, or ground inspections are necessary.

(c) Specific authorization to examine and approve related or special data on reports such as loading schedules or devices, weight and balance reports, equipment lists, certain Airplane Flight Manual revisions, etc.

(d) Specific authorization to examine and approve data for alterations and repairs.

(4) A DER cannot approve test plans but should recommend approval in the submittal to the ACO. The ACO may delegate test plan approval on a case-by-case basis.

(5) The DER must obtain specific authorization from the project ACO prior to witnessing a test as the FAA representative or approving any test data on behalf of the FAA. When obtaining this prior authorization, the DER must:

(a) Define whether such tests are to show compliance with specific certification requirements (official FAA test), or to collect test data as part of the overall substantiation effort.

(b) Determine whether the FAA wishes to witness these tests.

(c) Discuss with the responsible ACO tests involving controversial qualitative judgments to define the extent of participation by the FAA.

(d) Verify that the necessary FAA conformity inspections have been accomplished prior to conducting type certification tests.

(6) The DER is not required to witness an entire test to approve the test data. However, the DER should witness those portions of the test dealing with critical conditions to insure that all the data are valid. A DER who is not authorized by the cognizant ACO to approve test data may be authorized to recommend FAA approval of test data within an FAA approved test program. When a DER approves test data, the DER is indicating that those portions of the test dealing with critical conditions have been witnessed by the DER, the test was conducted in accordance with the FAA approved test program, and the data are official test results.

(7) A flight test pilot DER is required to perform all tests on which the DER intends to approve or recommend approval of the data. When a flight test pilot DER approves test data, the DER is indicating that the DER performed the tests, the tests were conducted in accordance with the approved test plan, and the data are official test results. Generally, flight test programs approved to be conducted by a DER will require the issuance of a Type Inspection Authorization (TIA).

(8) If a DER refers to previously approved data, it is the responsibility of the DER, or the project applicant, to obtain permission from the holder of that data to use it.

(9) A company DER may function in any geographic area in which the company conducts business.

(10) A consultant DER may function in any geographic area. The DER must contact the ACO responsible for the project and outline plans for submittal of the original FAA Form 8110-3 with related technical data. When a DER is acting outside of the appointing ACO's geographical area, the DER must also submit copies of completed FAA Form 8110-3's to the appointing ACO to document the DER's activities. Failure to document activities could result in cancellation of the DER's appointment.

(11) A DER may be authorized to act as a DER (to find compliance only with U.S. requirements) in a country other than the U.S. under the following conditions and limitations:

(a) The DER should check with the project ACO to determine the cognizant ACO responsible for activities in the country in which the project will be accomplished.

(b) The DER should be aware that some countries do not allow DERs to operate in their domain.

(c) The DER must ensure that intended activities are not in conflict with the civil laws of the other country.

(d) The DER may only engage in activities associated with U.S. type certificated aircraft. The aircraft need not be U.S. registered.

(e) When the non-U.S. authority is active in approving changes to the type design, the DER should submit a letter from the airworthiness authority of the country of registry with the STC application to the project ACO. This letter will state that the airworthiness authority has no objections to FAA DAR's and DMIR's making findings of conformity or DER's making findings of compliance for modifications/alterations on the aircraft registered in their country.

(f) A DAR with proper FAA approval may conduct/verify conformity inspections required for the project. The DER should meet with the project ACO as an initial step in the project to establish that the proposed DER and DAR/DMIR have the knowledge of the aircraft type design necessary to make findings of data compliance and conformity.

(g) The project ACO must be aware of the DER's limitations. More than one DER may be needed to cover the entire project. The applicant for an STC is responsible for identifying how each aspect of the project is to be approved so that the ACO can determine the full extent of its involvement.

(h) As authorized by the project ACO, the DER may work with a DAR/DMIR, when coordinated and approved by the appropriate MIDO, to conduct conformity inspections leading to the issuance of an STC.

(i) A finding of compliance may be made to requirements that have been adopted or accepted by the FAA, such as the Joint Aviation Requirements for very light aircraft (JAR-VLA), when used in certifying certain small aircraft. FAA Form 8110-3 is used only to approve or recommend approval with U.S. requirements. A DER operating outside the U.S. is not authorized to make approvals on behalf of another airworthiness authority nor is the DER authorized to use the DER number or any FAA forms for this purpose.

(j) The DER must submit to the project ACO the original FAA Form 8110-3 for any certification data which the DER approves or recommends for approval. The DER also must send a

copy of the form to the appointing ACO, if different from the project ACO.

(k) During the DER's stay outside the U.S., the project ACO may require the DER to report activities periodically.

(1) DERs working with FAA Approved Repair Stations in foreign countries shall give prior notification in writing to the FAA Flight Standards International Field Office having cognizance over the particular repair station involved. For identification and location of international offices, consult the ACO or a Regional Flight Standards Division Office.

(12) All DER's must notify their appointing ACO of any change of status, such as a change in base of operation or leaving the employ of the manufacturer who requested the DER appointment. Notification of change of status to the appointing ACO will ensure that records are kept current and there is a proper flow of correspondence. A company DER is no longer a DER upon leaving the employ of the employer who requested the DER appointment unless the DER also holds a separate appointment as a consultant DER.

(13) The DER can release copies of FAA Form 8110-3 to a client, operator, or aviation safety inspector upon request. However, requests from other persons for copies should be referred to the project ACO. See paragraph 17.d. below for information on FAA Form 8110-3 distribution.

(14) The certification applicant is responsible for maintaining a file of copies of all FAA Form 8110-3's submitted to the FAA and any associated data.

(15) The DER should have a general knowledge of the overall DER system and FAA certification procedures so that the DER and FAA ACO can work together as a team. A DER, while acting for the FAA, is expected to be guided by "good practice" principles in exercising the duties of a DER. "Good practice" is developed through experience and know-how over the years, and carries with it a high degree of confidence. Good practice exemplifies what has been shown to be reliable and satisfactory.

Methods or procedures inconsistent with, or departing from, good practice become questionable practices and should be brought to the attention of the DER. The DER will then be monitored for compliance with good practice. Further deviations could be considered misconduct and grounds for termination.

b. Type Certification and Changes in Type Design.

(1) Upon receipt of an application for a Type Certificate (TC), a Supplemental Type Certificate (STC), or a major change to an approved type design, representatives of the project ACO will discuss necessary procedures and conformity requirements with the applicant and the DER. The DER or the ACO will subsequently arrange, as necessary, periodic conferences to discuss any problems, status of the project, and arrangement for reporting progress. These conferences also provide the opportunity for a DER to be appropriately advised by the ACO of particular policies, standards, and procedures that apply to the specific project.

(2) All technical data must be examined by the DER to determine compliance with pertinent FAA requirements. The DER will investigate technical data as requested by an employer in accordance with the terms of the DER designation. The DER must not be forced by the employer to approve technical data which the DER does not find to comply with the applicable airworthiness requirements. The DER must report any coercion to the project ACO.

(3) When the DER determines that specific data (reports, drawings, tests, etc.) show compliance with all pertinent FAA requirements, the findings are to be submitted to the ACO on FAA Form 8110-3. FAA Form 8110-3 outlines the nature and extent of the DER's approval. The DER must advise the project ACO of relevant data which has not been approved to ensure a complete investigation of compliance with all pertinent requirements. The original FAA Form 8110-3, together with referenced approved reports and drawings, should be forwarded to the ACO in sufficient time to meet agreed certification schedules. When data involves more than one DER, all the DERs involved must sign FAA Form 8110-3's to indicate the total extent of DER approval. Separate FAA Form 8110-3's may be submitted.

Each DER approval must be clearly identifiable on each FAA Form 8110-3.

(4) If FAA flight tests are necessary, a completed FAA Form 8110-3 must be forwarded to the project ACO recommending approval of the proposed flight test plan and requesting issuance of a TIA. The flight test article(s) involved cannot be considered "approved" until FAA conformity/inspections have been satisfactorily completed. A TIA will be issued when flight tests are authorized. The DER, when authorized to conduct an FAA flight test, should coordinate the flight test with the appropriate FAA flight test representatives.

(5) All Aircraft Flight Manuals (AFM) and supplements or major revisions to AFM's must be approved by the manager of the appropriate ACO or an authorized representative. DERs may only recommend approval. However, DER's may be authorized by the manager of the ACO to approve specified minor revisions to AFM's.

(6) DER's are encouraged to participate as advisors to the FAA in type certification board meetings on projects in which they are involved.

c. Service Documents. The DER is encouraged to approve the engineering aspects of the product manufacturer's service documents. Service bulletins involving kits and type design changes require FAA or DER approval; maintenance tips do not. Service documents that are made a part of an airworthiness directive, or referenced therein, must be approved by the FAA. Revisions of service documents which have been made a part of FAA regulatory action must be FAA approved as well. A DER approval of service document information must be clearly stated to indicate that only the appropriate engineering aspects of the document are approved. However, engine and propeller service documents are considered to be extensions of the instructions required by 14 CFR sections 33.4 and 35.4 and must be acceptable to the Administrator. AC 20-114, Manufacturer's Service Documents, suggests acceptable methods by which product manufacturers may indicate FAA approval of recommended actions prescribed in the manufacturer's service documents.

d. Materials Review Board (MRB) Actions.

(1) The engineering member of the MRB is not required to be a DER. The members of the MRB are primarily manufacturer's personnel acting on behalf of the manufacturer. If the engineering representative is also a DER, the DER acts only as an engineering representative for the manufacturer and not as a DER for the FAA during any participation in an MRB action.

(2) When an MRB action requires a significant deviation from type design, a manufacturer may use an available and qualified DER to evaluate and approve the revised design data. DER approval of design data is indicated on FAA Form 8110-3 marked "Approve these data."

e. Parts Manufacturer Approval (PMA) and Technical Standard Order (TSO) Approvals. The DER does not have authority to make PMA or TSO approvals. These approvals are reserved for the FAA. However, a DER may contribute towards PMA approvals, within the scope of the authorization approved by the project ACO, by making findings of identity and by making findings relative to airworthiness requirements by test and computation. The DER has the responsibility to work within the limitations and designation of his or her delegated authority. The DER must be specifically authorized to make a finding of identity by the DER's appointing ACO. The DER is required to follow the provisions of Order 8110.42(), Parts Manufacturer Approval Procedures, when conducting PMA activities. An example of FAA Form 8110-3 with identity notations is shown in Figure 16 of appendix 3.

(1) The DER and the PMA applicant should verify the DER's authority and limitations before proceeding with the finding of identity.

(2) For critical and life-limited parts, appropriate DERs may sign FAA Form 8110-3 as "recommend approval" only. Final engineering approval is made by the ACO.

(3) For other parts, appropriate DERs may sign FAA Form 8110-3 as "approved", indicating identity to the TC or TSOA holder's data listed, i.e. the data that define the part

covered under a TC or TSO approved article eligible for installation on a type certificated product. The requested eligibility for the applicable product model(s) must be indicated. The applicant's TC holder or TSOA data examined by the DER will be submitted to the project ACO with FAA Form 8110-3 and the PMA data.

(4) Checking the approved block on FAA Form 8110-3, Statement of Compliance with the Federal Aviation Regulations, does not mean that the PMA or any engineering aspects of the data are approved. It means the DER is indicating his/her finding that the PMA applicant's design is identical to the TC or TSOA holder's design. A note on FAA Form 8110-3 "LIST OF DATA" section must state "FAA approval of the design is contingent upon FAA engineering verification of the type design data (or TSOA data) listed."

(5) The "PURPOSE OF DATA" block on Form 8110-3 will state "Identity only approval under 21.303." The "APPLICABLE REQUIREMENTS" block will state "FAR 21.303(c)(4)." The DER making the finding must hold delegated authority in the appropriate airworthiness areas.

(6) The FAA will verify that the listed TC or TSOA holder's data is approved type design data for the product models indicated and the stated eligibility is valid. The FAA also verifies that there are no mandatory corrective actions that must be implemented and that there are no serious unresolved service difficulties that make the part ineligible. The applicant's design need not conform to the latest revision level of the TC or TSOA holder's drawing if the FAA determines that the previously approved parts are still eligible for installation on the listed product models.

(7) Upon verification that all requirements are met, the ACO will continue processing the application in accordance with FAA Order 8110.42, Parts Manufacturer Approval Procedures.

f. Changes in Noise or Emissions. The DER must determine if any type design change he/she is asked to approve will result in an "acoustical change" (reference 14 CFR sections 21.93(b), 36.7, and 36.9) or changes to engine emissions (reference 14 CFR

part 34. If the DER suspects that a design change will affect noise or engine emissions, the DER must notify the applicant as soon as possible because the design change must have FAA evaluation and approval.

g. Military Conversions. A military aircraft owner may request a DER to handle the conversion of a military aircraft to its civil counterpart. The DER must inform the owner that a DER is limited to approving technical data.

h. Repairs and Alterations. Part 1 of Title 14 CFR defines "major alterations," "minor alterations," "major repairs," and "minor repairs." 14 CFR part 43, Appendix A, contains examples of major alterations and major repairs. Major repairs and alterations require the development of appropriate substantiating technical data. Minor repairs and alterations do not require DER or FAA engineering approval. Any technical data in support of a repair or alteration which does require FAA engineering approval may instead be approved by DER's, within their limitations.

NOTE: A repair is the restoration of a damaged airframe, powerplant, propeller, or appliance accomplished in such a manner and using material of such quality that its restored condition will be at least equal to its original or properly altered condition (with regard to aerodynamic function, structural strength, resistance to vibration and deterioration, and other qualities affecting airworthiness). The damage can be due to deterioration or to external causes. An alteration is the modification of an aircraft from one sound state to another sound state; the aircraft meets the original airworthiness specifications and standards both before and after the modification.

(1) The DER must obtain specific authorization from the appointing ACO prior to initiating approvals for major repairs or major alterations. Authorization may be verbal and confirmed in writing, by an authorization letter, or by an FAA Form 8110-25. An example of a letter authorizing approvals for repairs or alterations is shown in appendix 3, figure 17. An authorized DER may approve technical data for major repairs and alterations without first notifying the project ACO, except when

the part is critical or life limited or if the work will be done outside the country. For critical or life limited parts, the DER must contact the project ACO for guidance.

(2) The DER will submit the original FAA Form 8110-3 and, if specifically requested, a copy of approved data, to the project ACO. The DER shall also submit a copy of the FAA Form 8110-3 to the appointing ACO to show activity. The transmittal of the 8110-3's should contain a reference to the applicant and FSDO involved and where the airplane is located. The DER shall note in the "Purpose of Data" block of the FAA Form 8110-3 that the purpose is in support of a major repair or major alteration, the approval is design data approval only and is not installation approval. Examples are shown in appendix 3, figure 9 and 10. The DER should also submit a copy of the Form 8110-3 and a copy of approved data to the repair station and if required a copy of the FAA Form 8110-3 to the aircraft operator as part of the aircraft records required by 14 CFR section 43.9.

(3) The DER should coordinate with the Flight Standards Office responsible for the geographic area either domestic or foreign.

(4) The DER is not authorized to grant "field approvals" for return to service; to sign-off an FAA Form 337, Major Repair or Alteration; to grant data approval by signing log books, flight manuals, or other like documents; or to issue STC's. As an aid to the FSDO involved, the following note or notes similar to those on appendix 3 figures 9 and 10 should be added to the body of the 8110-3:

"This approval indicates the data listed above demonstrates compliance only with the regulations specified by paragraph and subparagraph listed below as "APPLICABLE REQUIREMENTS." (Compliance to additional regulations not listed here may be required). This form does (does not) constitute FAA approval of all the engineering design data necessary for substantiation of compliance to necessary requirements for the entire alteration/repair."

When working with repair stations, the DER should coordinate with the Flight Standards District Office when approving engineering

aspects of process specifications associated with the repair to assure the repair station is approved to perform the process.

(5) The DER must coordinate with the project ACO for the latest appropriate policy and guidance for anything other than a complete repair such as an "interim" structural repair. The DER is not authorized to approve extensions of established limits without prior coordination with the project ACO.

(6) It is expected that basic design information will be available to DER's within a manufacturer's organization. A DER outside the manufacturer's organization should make every effort to obtain the necessary information. If design information is not available, appropriate conservatism should be applied to adequately offset the lack of specific knowledge. The DER should determine that the technical data covering the repair contain clear reference and appropriate consideration of all fundamental design information pertinent to the repair. The DER should develop, or obtain, technical data to substantiate the repair in accordance with the following guidance:

(a) **Technical Data.** The applicant or DER is responsible for showing compliance with applicable airworthiness requirements (14 CFR section 21.101). Normally, these are the rules at the amendment levels defined in the applicable Type Certificate Data Sheet for which the manufacturer originally showed compliance.

(b) **Standards.** The technical data developed and used for a major repair must show that the condition of the repaired product will be at least equal to its original or properly altered condition. To accomplish this, the data must show compliance with the applicable airworthiness standards.

(c) **Performance.** Both design data and substantiating data should be created to show how the repaired or altered product meets all the requirements of the applicable regulations and, when operated within the approved flight envelope of the certificated aircraft and when maintained in accordance with FAA approved or accepted manuals or an FAA approved continuous airworthiness maintenance program, will function reliably throughout its established inspection interval.

i. **FAA Response.** The ACO Personnel will review FAA Form 8110-3 submittals and will acknowledge to the DER receipt of the submittals.

17. FAA Form 8110-3, STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS

a. **Use of Form.** The DER's **only** means of approving technical data is through the completion of FAA Form 8110-3. The date entered in the date box in the upper right corner of the form is the date the DER made the finding that the listed data complied with the applicable requirements. The DER's signature and identification number in the "Certification" block on this form constitutes the DER's approval of the technical data. The DER's may not use their DER identification number when signing company or personal reports, drawings, service documents, or letters. This ensures that the DER's signature on such documents does not constitute FAA approval.

b. **Applicable Requirements.** In the "APPLICABLE REQUIREMENTS" block of FAA Form 8110-3, the DER shall list all applicable regulations and identify by paragraph and subparagraph. If the list is too long to be included on FAA Form 8110-3, additional sheets or an attachment of the certification basis may be included. It must be clear from the list the exact regulation(s) paragraphs, subparagraphs or other appropriate airworthiness requirements with which the data comply. In the case where non Federal Aviation Regulations (but FAA adopted or accepted) requirements are used, reference to the appropriate governing regulations should be listed; see sample FAA Form 8110-3 in appendix 3, figure 11. Merely indicating "structural regulations" or other generalizations is insufficient.

c. **Extent of Approval.** In the "List of Data" block, the DER must indicate exactly the extent of the approval. The DER must reference all data covered by the approval: Drawing numbers with change letters, report numbers with revision levels and dates, etc. Any data that the DER cannot or chooses not to approve must be indicated by a separate listing with the notation: "FAA APPROVAL REQUIRED." If such listing of unapproved data is very voluminous, then a statement clearly

indicating the extent of approval or nonapproval is sufficient, e.g., "Structural Aspects Approved Only -- No Approval of Electrical Data" or similar statements. When a DER has the authority to "approve" the technical data being submitted but only "recommends approval," the DER must explain in writing why the data was not approved.

d. Distribution of FAA Form 8110-3. The DER will send all original FAA Form 8110-3's to the project ACO. The DER should also send copies of all forms to the appointing ACO, if different from the project ACO. For data approvals associated with major repairs, major alterations, and field approvals, all original FAA Form 8110-3's should be sent to the project ACO. The transmittal of the 8110-3's submitted for data approvals intended for field installations should contain a reference to the applicant and FSDO involved and where the airplane is located. When requested, the DER should provide a copy of the applicable form to the operator, client, repair station, or aviation safety inspector, in a timely manner, to allow verification of any approval for which the DER has assumed responsibility. If requested, a list of the DER's FAA Form 8110-25 limitations may be attached to the copy of the FAA Form 8110-3.

Note: There may be local working agreements defining specific requirements for submitting FAA Form 8110-3 that are acceptable to the project ACO.

e. Omissions and Errors. Careful preparation and use of FAA Form 8110-3 is important. Omissions and errors in approvals have caused delays in certification programs. Some of the more common omissions and errors are:

- (1) Failure to sign form;
- (2) Failure to include revision levels or dates with the drawing numbers, reports, etc., listed;
- (3) Failure to use FAA Form 8110-3 as a listing of the drawings approved;
- (4) Failure to specify those portions of the data the FAA must evaluate;

- (5) Failure to check the "recommend" or "approve" box;
- (6) Failure to submit the original FAA Form 8110-3 to the Project ACO;
- (7) Failure to reference specific REGULATION(S) sections in the "Applicable Requirements" block;
- (8) Failure to state, in detail, the reasons for changes to the drawings or projects they are related to in the "Purpose of Data" space; and
- (9) Failure to approve data only within the DER's delegated functions and authorized areas.
- (10) Failure to properly identify the make of the aircraft as it relates to the existing TC holder; ie restricted category aircraft should not list original manufacturer's name.

18. DER DATA BASE. The ACOs have a responsibility to manage DERs. Part of the management involves some repetitive administrative functions such as issuing renewal letters on an annual basis, initiating mailers for DER newsletters/conferences, and providing listings of DERs to the public. An additional responsibility involves monitoring the performance of the DERs. In the process of administering the DER program, supervising offices have a need to provide DER's addresses and specialty information for publication in a national publication (Advisory Circular 183.29-1), to initiate action for DER kit distribution, to track DER activity, and to perform oversight activity. The local DER data base will be used to accomplish these administrative functions. The primary functions of the local DER data base are to track and monitor DERs, DER Candidate applications, delegations, performance feedback, and renewals in the ACO and to provide reporting capabilities on the local and national levels.

APPENDIX 1. TYPICAL LIMITATIONS ON DER FUNCTIONS**1. MATTERS WHICH DER'S MAY
APPROVE IN AUTHORIZED AREAS.****a. STRUCTURAL.**

Load analysis using previously approved methods; structural analysis (static, dynamic, fatigue); detail drawings, assembly drawings and top drawings; safety analysis(1); test results; perform damage tolerance evaluations; show compliance with requirements for freedom from flutter, reversal, and divergence; loading limitations for cargo compartments, flooring, galleys, etc.; weight and balance calculations; applications of approved weight and balance devices; landing gear; flight control systems. Interior arrangements, interior materials, flammability and fire containment, evacuation systems and door mechanisms; flotation and ditching provisions. They may also witness tests to show compliance, if authorization to do so is obtained prior to the conducting of the test. Witness qualification tests of materials and processes; approval of test results, approval of related reports and specifications.

**2. MATTERS TO BE REFERRED
TO FAA FOR APPROVAL.****a. STRUCTURAL.**

Departures from specific regulations; basic load analysis; structural design criteria including applied loads, influence parameters, dynamic loading concepts, loading spectra, fail-safe criteria and assumptions; analysis and other compliance methods; approval of probability conclusions; material and fastener allowables; primary process specifications; test plans; new test methods or criteria; results of official tests when a DER is not otherwise authorized; new types of weight and balance devices; loading and structural venting assumptions for flotation and ditching analysis; overall approval of cabin interior arrangements; previously unapproved crashworthiness matters; emergency evacuation tests and analyses; development and qualification tests and programs; material and process specifications pertaining to composites and structural adhesives utilized in primary structure.

APPENDIX 1. - TYPICAL LIMITATIONS ON DER FUNCTIONS (Continued)

1. MATTERS WHICH DER'S MAY
APPROVE IN AUTHORIZED AREAS.

b. POWERPLANT.

Installation, assembly and detail drawings; engine performance calculations using FAA approved methodology; propeller vibration; software verification and validation; safety analysis (1); data reduction and related reports.

c. SYSTEMS & EQUIPMENT.

Avionic/Electrical Equipment.
Certification test results; related reports and drawings; load summaries and analysis; safety analysis(1); reliability studies, software verification and validation; flight control systems.

Hydraulic System.
Certification test results; related reports and drawings; safety analysis(1); reliability studies; load summaries and analysis; software verification and validation; flight control systems.

2. MATTERS TO BE REFERRED
TO FAA FOR APPROVAL.

b. POWERPLANT.

Basic systems design; principles of systems operation; new types of equipment; operational procedures and limitations; engine performance analysis methods; test plans; ground and flight test results; fire detector and extinguishing systems and installations; drive system life limits.

c. SYSTEMS & EQUIPMENT.

Avionic/Electrical Equipment.
New concepts of system design; results of certification flight tests; test plans.

Hydraulic System.
New types of equipment and systems; unconventional applications; operational process and sequences; test plans; results of certification flight tests.

APPENDIX 1. - TYPICAL LIMITATIONS ON DER FUNCTIONS (Continued)**1. MATTERS WHICH DER'S MAY
APPROVE IN AUTHORIZED AREAS.****c. SYSTEMS & EQUIPMENT
(Continued).**

Mechanical Systems or Equipment.
Certification test results of miscellaneous systems or equipment installations, such as pneumatic, cabin pressurization, wheels, brakes, instruments, oxygen and fire prevention; related reports and drawings; safety analysis(1); reliability studies; interior arrangements and materials; flammability and fire containment; evacuation systems; door mechanisms; flotation and ditching provisions; software verification and validation; flight control systems.

d. RADIO.

Engineering reports, drawings, tests, and test data related to the design and operating characteristics of radio equipment as manufactured and installed; modification to radio equipment; safety analysis(1).

e. ENGINE.

Drawings; software verification and validation; exhaust emissions testing; data reduction and related test reports; safety analysis(1).

**2. MATTERS TO BE REFERRED
TO FAA FOR APPROVAL.****c. SYSTEMS & EQUIPMENT
(Continued).**

Mechanical Systems or Equipment.
New types of equipment systems, or their installations; unconventional applications; operational procedures or limitations; overall approval of cabin interior arrangement; previously unapproved matters involving crashworthiness; test plans; results of certification flight tests.

d. RADIO.

New types of radio or their installations; unconventional applications; operational procedures or limitations; test plans; results of certification flight tests.

e. ENGINE.

Basic engine design; electronic fuel control software design; new principles of operation; new types of accessories; operational procedures and limitations; vibration analysis methods; overall test plan; certification test plan; critical rotating parts life analyses and extensions; new materials and manufacturing processes.

APPENDIX 1. - TYPICAL LIMITATIONS ON DER FUNCTIONS (Continued)

1. MATTERS WHICH DER'S MAY
APPROVE IN AUTHORIZED AREAS.

f. PROPELLER.

Drawings; software verification and validation; data reduction and related test reports; safety analysis(1).

g. FLIGHT ANALYST.

Preliminary performance estimates; performance flight test reports; verification of accuracy and completeness of portions of TIR's; reports and calculations related to, flight manuals; specified minor AFM revisions; May only recommend approval of flight test plans.

h. FLIGHT TEST PILOT.

Flight test results of limited programs on new or modified aircraft for flight characteristics and the determination of operational procedures for Aircraft Flight Manuals; flight test compliance demonstration and data; specified minor AFM revisions. May only recommend approval of test plans, AFM's, and AFM supplements.

2. MATTERS TO BE REFERRED
TO FAA FOR APPROVAL.

f. PROPELLER.

Basic propeller design, overall test plan and life limits, new principles of operations, operational limitations, vibration analysis methods, overall test plan, certification test program plan.

g. FLIGHT ANALYST.

Overall flight test plans; new methods or principles of performance calculations or derivations; final limitations, operating procedures or sequences; Aircraft Flight Manuals; flight characteristics and performance on new model aircraft.

h. FLIGHT TEST PILOT.

Overall flight test plans, limitations, operating procedures or sequences; new methods or principles of testing or presentation of results; unusual aircraft flight characteristics or performance; Aircraft Flight Manuals, or revisions; flight advanced technical design features; new operational procedures.

APPENDIX 1. - TYPICAL LIMITATIONS ON DER FUNCTIONS (Continued)**1. MATTERS WHICH DER'S MAY
APPROVE IN AUTHORIZED AREAS.****i. ACOUSTICAL.**

Noise certification test results conducted in accordance with an approved test plan; noise data, noise analyses, and results that were measured and evaluated as prescribed in part 36 or an equivalent procedure approved by AEE-1. May only recommend approval of test plans and final noise certification compliance reports.

**2. MATTERS TO BE REFERRED
TO FAA FOR APPROVAL.****i. ACOUSTICAL.**

Test plans, equivalent procedures, operating limitations, determination of an acoustical change, and final noise certification compliance reports including aircraft noise levels approval.

NOTE: "Safety Analysis(1)" may include but is not limited to the following:

Functional Hazard Analysis (FHA)
Failure Modes and Effects Analysis (FMEA)
Fault Tree Analysis (FTA)
Zonal Analysis (ZA)

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS.

FIGURE 1. CHART A, DESIGNATED ENGINEERING REPRESENTATIVE
STRUCTURAL

NOTES:

1. Established appointment areas for qualified applicants are indicated by "X".

2. Regulatory areas in which the designee is authorized are shown on FAA Form 8110-25.

DELEGATED FUNCTIONS		AUTHORIZED AREAS															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1	STATIC ANALYSIS	X	X	X	X	X	X	X									X
2	DYNAMIC ANALYSIS	X				X		X									X
3	FATIGUE ANALYSIS	X	X	X	X	X		X									X
4	DESIGN AND CONSTRUCTION	X	X	X	X	X	X	X				X	X	X	X	X	X
5	FLUTTER/GROUND VIBRATION	X						X									X
6	SAFETY ANALYSIS	X				X	X							X	X	X	X
7	FLOTATION & DITCHING ANALYSIS	X															X
8	STRUCTURAL LOADING LIMITATIONS								X								X
9	SERVICE DOCUMENTS	X	X	X	X	X	X	X				X	X	X	X	X	X
10	MATERIAL & PROCESS SPEC.									X	X						X
11	FLAMMABILITY												X	X			X
12	DAMAGE TOLERANCE EVALUATIONS	X						X									X

NOTE (1): Structural - General embraces all airframe components such as wing, fuselage, empennage, landing gear, flight controls, engine mounts, and special components.

NOTES (2) and (3): Select Specialty by Note number and sub-letter.

(2) Metallic Materials/Processes

- A - Materials & Processes - General
- B - Non-Destructive Inspection/Testing
- C - Metallurgy
- D - Metal Joining Processes
- E - Structural Adhesives
- F - Mechanical Fasteners
- G - Surface Treatment/Coatings
- H - Bearings

(3) Nonmetallic Materials/Processes

- A - Material & Processes - General
- B - Transparent (Glazed) Material
- C - Polymeric Materials
- D - Structural Adhesives
- E - Mechanical Fasteners
- F - Composites
- G - Non-Destructive Inspection/Testing
- H - Surface Treatment & Coatings
- I - Structural Joining Methods

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS (CONTINUED).

FIGURE 2. CHART B, DESIGNATED ENGINEERING REPRESENTATIVE POWERPLANT INSTALLATIONS

NOTES:

1. Established appointment areas for qualified applicants are indicated by "X".

2. Regulatory areas in which the designee is authorized are shown on FAA Form 8110-25.

		AUTHORIZED AREAS					
		Airplane Turbine Engine	Airplane Piston Engine	Rotorcraft Turbine Engine	Rotorcraft Piston Engine	Auxiliary Power Unit (APU)	Special (Specify)
DELEGATED FUNCTIONS		A	B	C	D	E	F
1	ENGINE INSTALLATION	X	X	X	X	X	X
2	FUEL & OIL	X	X	X	X	X	X
3	INDUCTION/EXHAUST SYSTEMS	X	X	X	X	X	X
4	THRUST REVERSERS	X	X				X
5	FIRE PROTECTION	X	X	X	X	X	X
6	ICE PROTECTION	X	X	X	X	X	X
7	COOLING	X	X	X	X	X	X
8	ENGINE PERFORMANCE/OPERATIONS	X	X	X	X	X	X
9	INDICATING SYSTEMS	X	X	X	X	X	X
10	LIGHTNING/HIRF PROTECTION	X	X	X	X	X	X
11	SOFTWARE	X	X	X	X	X	X
12	CONTROL SYSTEM - ELECTRONIC	X	X	X	X	X	X
13	CONTROL SYSTEM - MECHANICAL	X	X	X	X	X	X
14	EMISSIONS	X	X	X	X		X
15	VIBRATION - ENGINE, PROPELLER, OR DRIVE SYSTEM	X	X	X	X		X
16	PROPELLER	X	X				X
17	DRIVE SYSTEM	X	X	X	X		X
18	TRANSMISSIONS			X	X		X
19	SAFETY ANALYSIS	X	X	X	X	X	X
20	SERVICE DOCUMENTS	X	X	X	X	X	X

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS (CONTINUED).

FIGURE 3. CHART C1, DESIGNATED ENGINEERING REPRESENTATIVE
SYSTEMS AND EQUIPMENT (MECHANICAL EQUIPMENT)

NOTES:

1. Established appointment areas for qualified applicants are indicated by "X".

2. Regulatory areas in which the designee is authorized are shown on FAA Form 8110-25.

		AUTHORIZED AREAS													
		Air Conditioning	Hydraulic	Ice Protection	Rain Protection	Oxygen	Pneumatics	Wheels, Tires, Brakes	Interior Arrangements	Interior Materials	Pressurization	Fire Protection	Water System, Potable and Waste	Evacuation Systems	Special (Specify)
DELEGATED FUNCTIONS		A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	DETAIL DESIGN AND INSTALLATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X
2	EQUIPMENT QUALIFICATION TESTS	X	X	X	X	X	X	X			X	X	X	X	X
3	SOFTWARE	X	X	X	X	X	X	X			X	X	X		X
4	SAFETY ANALYSIS	X	X	X	X	X	X	X			X	X	X	X	X
5	FLAMMABILITY									X		X			X
6	LIGHTNING/HIRF PROTECTION	X	X	X	X	X	X			X	X	X	X		X
7	SERVICE DOCUMENTS	X	X	X	X	X	X	X	X	X	X	X	X	X	X

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS.

FIGURE 4. CHART C2, DESIGNATED ENGINEERING REPRESENTATIVE SYSTEMS AND EQUIPMENT (ELECTRICAL EQUIPMENT)

NOTES:

1. Established appointment areas for qualified applicants are indicated by "X".

2. Regulatory areas in which the designee is authorized are shown on FAA Form 8110-25.

		AUTHORIZED AREAS											
		Electrical Equipment/Systems	Electronic Equipment/Systems	Communications Systems/Antennas	Automatic Flight Controls/Augmentation	Instruments	Navigation Systems/Antennas	Air Data/Pitot Static	Warning Systems	Interior/Exterior Lighting	Flight Data/Voice Recording	Passenger Address/Entertainment	Special (Specify)
DELEGATED FUNCTIONS		A	B	C	D	E	F	G	H	I	J	K	L
1	DETAIL DESIGN AND INSTALLATION	X	X	X	X	X	X	X	X	X	X	X	X
2	EQUIPMENT QUALIFICATION TESTS	X	X	X	X	X	X	X	X	X	X	X	X
3	SOFTWARE	X	X	X	X	X	X	X	X		X	X	X
4	SERVICE DOCUMENTS	X	X	X	X	X	X	X	X	X	X	X	X
5	ELECTRICAL LOAD ANALYSIS	X	X	X	X	X	X	X	X	X	X	X	X
6	SAFETY ANALYSIS	X	X	X	X	X	X	X	X	X	X	X	X
7	LIGHTNING/HIRF PROTECTION	X	X	X	X	X	X	X	X				X

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS (CONTINUED).

FIGURE 5. CHART D, DESIGNATED ENGINEERING REPRESENTATIVE RADIO

NOTES:

1. Established appointment areas for qualified applicants are indicated by "X".

2. Regulatory areas in which the designee is authorized are shown on FAA Form 8110-25.

		AUTHORIZED AREAS				
		Radio Design	Operating Characteristics	Antenna Design	Radio Installation	Special (Specify)
DELEGATED FUNCTIONS		A	B	C	D	E
1	ANALYTICAL SUBSTANTIATION	X	X	X	X	X
2	DETAIL DESIGN	X	X	X	X	X
3	SAFETY ANALYSIS	X	X	X	X	X
4	SERVICE DOCUMENTS	X	X	X	X	X

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS (CONTINUED).

FIGURE 6. CHART E, DESIGNATED ENGINEERING REPRESENTATIVE ENGINES

NOTES:

1. Established appointment areas for qualified applicants are indicated by "X".

2. Regulatory areas in which the designee is authorized are shown on FAA Form 8110-25.

DELEGATED FUNCTIONS		AUTHORIZED AREAS		
		Turbine Engines	Piston Engines	Special (Specify)
A	B	C		
1	DETAIL DESIGN	X	X	X
2	BLOCK TESTS	X	X	X
3	PERFORMANCE CHARACTERISTICS	X	X	X
4	VIBRATION ANALYSIS	X	X	X
5	OPERATION MANUALS	X	X	X
6	OVERHAUL MANUALS	X	X	X
7	SERVICE DOCUMENTS	X	X	X
8	EXHAUST EMISSIONS EVALUATION	X	X	X
9	SOFTWARE	X	X	X
10	SAFETY ANALYSIS	X	X	X
11	LIGHTNING/HIRF PROTECTION	X	X	X

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS (CONTINUED).

FIGURE 7. CHART F, DESIGNATED ENGINEERING REPRESENTATIVE PROPELLERS

NOTES:

1. Established appointment areas for qualified applicants are indicated by "X".

2. Regulatory areas in which the designee is authorized are shown on FAA Form 8110-25.

		AUTHORIZED AREAS		
		Controlable Pitch Propellers	Fixed Pitch Propellers	Special (Specify)
DELEGATED FUNCTIONS		A	B	C
1	DETAIL DESIGN	X	X	X
2	BLOCK TESTS	X	X	X
3	PERFORMANCE CHARACTERISTICS	X	X	X
4	VIBRATION ANALYSIS	X	X	X
5	OPERATION MANUALS	X	X	X
6	OVERHAUL MANUALS	X	X	X
7	SERVICE DOCUMENTS	X	X	X
8	SOFTWARE	X		X
9	SAFETY ANALYSIS	X	X	X
10	LIGHTNING/HIRF PROTECTION	X	X	X

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS (CONTINUED).

FIGURE 8. CHART G, DESIGNATED ENGINEERING REPRESENTATIVE FLIGHT ANALYST

NOTES:

1. Established appointment areas for qualified applicants are indicated by "X".

2. Regulatory areas in which the designee is authorized are shown on FAA Form 8110-25.

		AUTHORIZED AREAS											
		Aircraft Performance	Aerodynamics	Flight Characteristics	Sys. Calif. (Air Spd., Alt., Air Temp.)	Propulsion Sys. & Related Components	Elec./Electronic Sys.-Related Components	Mech. & Hyd. Sys.-Related Components	Pressure & Air Conditioning Systems	Auto Control Systems	Ice Protection System	Special (Specify)	Part 36 Reference Conditions (1)
DELEGATED FUNCTIONS		A	B	C	D	E	F	G	H	I	J	K	L
1	REVIEW FLIGHT TEST PLANS	X	X	X	X	X	X	X	X	X	X	X	
2	REVIEW FLIGHT TEST INSTRUMENTATION	X	X	X	X	X	X	X	X	X	X	X	
3	WEIGHT/BALANCE SURVEILLANCE	X	X	X			X			X			
4	FLIGHT TEST DATA RECORDING	X	X	X	X	X	X	X	X	X	X	X	
5	FLIGHT TEST DATA REDUCTION/ANALYSIS	X	X	X	X	X	X	X	X	X	X	X	
6	FLIGHT TEST DATA EXPANSION (ALTITUDE/TEMPERATURE/WEIGHT)	X	X										
7	COMPILE FLIGHT TEST REPORTS	X	X	X	X	X	X	X	X	X	X	X	
8	COMPILE PERFORMANCE SUBSTANTIATION REPORTS	X	X										
9	COMPLETE PORTIONS OF TYPE INSPECTION REPORTS	X	X	X	X	X	X	X	X	X	X	X	
10	REVIEW AIRCRAFT FLIGHT MANUAL AND RECOMMEND APPROVAL	X	X	X	X	X	X	X	X	X	X	X	
11	COMPILE PART 36 REFERENCE PROFILES												X
<p>NOTE (1) : Specific appendix to part 36 (e.g., Appendix C, Appendix G, Appendix H, Appendix J) may be controlled by Federal Aviation Regulations authorized in delegation letter (e.g., FAR 23, FAR, 25, FAR 27, FAR 29) or by specific appendix (e.g. Appendix J Only). This may require specific FAR limitations for new authorized area L and delegated function 11.</p>													

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS (CONTINUED).

FIGURE 9. CHART H, DESIGNATED ENGINEERING REPRESENTATIVE FLIGHT TEST PILOT

NOTES:

1. Established appointment areas for qualified applicants are indicated by "X"

2. Regulatory areas in which the designee is authorized are shown on FAA Form 8110-25.

DELEGATED FUNCTIONS		AUTHORIZED AREAS										
		Aircraft Performance	Flight Characteristics	Propulsion Systems	Hyd., Elec. & Pneu. Systems	Pressurization and A/C Systems	Flight Instruments & Systems	Auto Control Systems	Ice Protection Systems	Operating Limitations/Procedures	H/V (Rotorcraft)	Special (Specify)
1	RECOMMEND APPROVAL OF FLIGHT TEST PLANS	X	X	X	X	X	X	X	X	X	X	X
2	CONDUCT GROUND TESTS AND EVALUATIONS	X		X	X	X	X	X	X	X		X
3	CONDUCT FLIGHT TESTS AND EVALUATIONS	X	X	X	X	X	X	X	X	X	X	X
4	COMPILE TEST REPORTS		X				X	X		X	X	X
5	COMPLETE PORTIONS OF AND APPROVE THE TYPE INSPECTION REPORT	X	X	X	X	X	X	X	X	X	X	X
6	RECOMMEND APPROVAL OF AIRCRAFT FLIGHT MANUAL	X	X	X	X	X	X	X	X	X	X	X

APPENDIX 2. DELEGATED FUNCTIONS AND AUTHORIZED AREAS (CONTINUED) .

FIGURE 10. CHART I, DESIGNATED ENGINEERING REPRESENTATIVE
ACOUSTICAL

NOTES:

1. Established
appointment areas for qualified
applicants are indicated by "X"


2. Regulatory areas in
which the designee is
authorized are shown on FAA
Form 8110-25.

		AUTHORIZED AREAS	
		Acoustical	Special (Specify)
DELEGATED FUNCTIONS		A	B
1	MEASUREMENT LOCATIONS	X	X
2	RECORDING EQUIPMENT	X	X
3	ANALYSIS EQUIPMENT	X	X
4	ENVIRONMENTAL CONDITIONS	X	X
5	CALCULATION PROCEDURE	X	X

APPENDIX 3. SAMPLES, FORMS, AND LETTERS

FIGURE 1. STATEMENT OF QUALIFICATIONS

Organizations complete only the applicable blocks and attach separate resumes with the names, signatures, titles and qualifications of those persons who would actually perform the authorized functions.

 STATEMENT OF QUALIFICATIONS (DAR—DMIR—DER—DPRE—DME)		Form Approved OMB-2120-0035	
US Department of Transportation Federal Aviation Administration		3. U.S. CITIZEN <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
INSTRUCTIONS: Print or type all entries except signatures			
1. NAME (Last, first, middle) OR ORGANIZATION Doe, John D.		PHONE NUMBER	4. SOCIAL SECURITY NO. 355-40-5522
2. ADDRESS (Number, street, city, state, and ZIP code) 352 N. Bangor Ct., Irving, TX 75060		5. DATE OF BIRTH July 4, 1955	
6. DESIGNATION SOUGHT			
<input type="checkbox"/> Designated Manufacturing Inspection Representative (DMIR)			
<input type="checkbox"/> Designated Mechanic Examiner (DME)		<input type="checkbox"/> Airframe Rating	
<input type="checkbox"/> Designated Parachute Rigger (DPRE)		<input type="checkbox"/> Powerplant Rating	
<input type="checkbox"/> Designated Engineering Representative (DER) (Consultant)		<input type="checkbox"/> Seat <input type="checkbox"/> Back <input type="checkbox"/> Chest <input type="checkbox"/> Other	
<input checked="" type="checkbox"/> Structural Engineering FAR 23 & 25		<input type="checkbox"/> Engine Engineering	
<input type="checkbox"/> Powerplant Engineering		<input type="checkbox"/> Propeller Engineering	
<input type="checkbox"/> Systems and Equipment Engineering		<input type="checkbox"/> Flight Analyst	
<input type="checkbox"/> Acoustical Engineering		<input type="checkbox"/> Flight Test Pilot	
<input type="checkbox"/> Designated Airworthiness Representative (DAR)		<input type="checkbox"/> Manufacturing Function(s) <input type="checkbox"/> Engineering Function(s) <input type="checkbox"/> Maintenance Function(s)	
NOTE: A separate application must be submitted for each discipline i.e. manufacturing engineering, maintenance.			
DAR applicants shall identify specific function(s), currently authorized in AC 183-33, for which appointment is sought.			
Order 8110.37A Appendix 2, Figure 1, Chart A, Delegated Functions 1 through 5, Authorized Areas A, B, C, D, E, & F			
7. EXPERIENCE RESUME FOR NUMBER OF YEARS, AS APPROPRIATE, PERTINENT TO DESIGNATION SOUGHT. Use additional sheets if necessary)			
Dates From To		Employer's Name Position Title and Duties	
1-84 Pres.		J. D. Doe & Associated Consultant Aeronautical Engineers, Dallas, TX President and Chief Engineer	
8. EDUCATION AND TRAINING HIGH SCHOOL LEVEL AND ABOVE PERTINENT TO DESIGNATION SOUGHT.			
Dates From To		Name of School Curriculum or Study Program Degrees Received	
9-74 7-79		Oklahoma State University Stillwater, OK Mechanical Engineer B.S.	
9. FAA CERTIFICATES NOW HELD PERTINENT TO DESIGNATION SOUGHT.			
Type	Certificate No.	Rating	Date Each Rating Issued
Private Pilot	1737685	Airplane Single Engine Land	3-08-80
10. EMPLOYER'S RECOMMENDATION (To be completed for DER and DMIR only)			
I recommend the person identified above be appointed as: <input type="checkbox"/> Designated Engineering Representative <input type="checkbox"/> Designated Engineering Manufacturing Inspection Representative			
Date	Primary Business	Signature	
(NOT APPLICABLE)	-SELF EMPLOYED CONSULTANT)		
11. LOCATION WHERE DESIGNEE FUNCTIONS WILL BE PERFORMED (To be completed for DAR, DME, and DPRE only)			
Address (NOT APPLICABLE)		Telephone Number	
12. CERTIFICATION: I certify that the above statements are true to the best of my knowledge and that I am familiar with the Federal Aviation Regulations pertinent to the designation sought.			
Date September 1, 1988		Signature John D. Doe	

FAA Form 8110-14 (3-83) SUPERSEDES PREVIOUS EDITION (REPRESENTATION)

SAMPLE - FAA Form 8110-14 (Front)
 (Reduced to approximately 80% actual size)

[illegible]

Page 2

APPENDIX 3. SAMPLES, FORMS, AND LETTERS

FIGURE 3. CERTIFICATE OF AUTHORITY (DER)

Department of Transportation FEDERAL AVIATION ADMINISTRATION CERTIFICATE OF AUTHORITY (DER)			F O L D	The bearer is authorized to act in capacity set forth on this Certificate of Authority in the following delegated functions and authorized areas.	
IS AUTHORIZED TO ACT AS A DESIGNATED ENGINEERING REPRESENTATIVE					
Engineering specialty	DER No.	Expires			
Date	Authorizing Office	Authorizing Official			

FAA Form 8110-25 (Revised 9-93) (REPRESENTATION)

CUT LINE



U.S. Department
of Transportation

**Federal Aviation
Administration**

[Appointing Office address]
[goes here]

[Letter of Appointment or Renewal]
[goes here]

FAA Form 8110-25 (Revised 9-93) (REPRESENTATION)

SAMPLE - FAA Form 8110-25
(Reduced to Approximately 80% Actual Size)

APPENDIX 3. SAMPLES, FORMS, AND LETTERS
FIGURE 4. CERTIFICATE OF DESIGNATION



U.S. Department
of Transportation
**Federal Aviation
Administration**

Certificate of Designation

Reposing special trust and confidence in the integrity, diligence, and discretion of

JOHN DOE

who has been found to have the necessary knowledge, skill, experience, interest, and impartial judgment to merit special public responsibility, I hereby designate as

DESIGNATED ENGINEERING REPRESENTATIVE

with authorization to act in accordance with the regulations and procedures prescribed by the Federal Aviation Administration relating to this designation.

Issued at **SOUTHWEST REGION, FORT WORTH, TEXAS**

Dated **OCTOBER 3, 1988**

Certificate No. **SW-535**

By Direction of the Administrator
John Smith

**MANAGER, AIRPLANE CERTIFICATION
OFFICE**

FAA FORM 8000-5 (4-84)(REPRESENTATION)

[Note: FAA Form 8000-5 is printed on parchment, 8"X10" in size, suitable for framing. Text is printed in black with top line and DOT emblem in blue.]

**SAMPLE - FAA Form 8000-5
(Reduced to approximately 70% actual size)**

11/12/96

8110.37B
Appendix 3

APPENDIX 3. SAMPLES, FORMS, AND LETTERS
FIGURE 5. MAILING LIST ACTION REQUEST

Appointing Office
Routing Symbol, List
Action, & Date -----

ANM-140L ORGANIZATION	<input checked="" type="checkbox"/> ADD <input checked="" type="checkbox"/> PROVIDE A KIT	<input type="checkbox"/> CHG. <input type="checkbox"/> DROP	DATE 8/5/85
▽			▽

Mailing List Code -----
Name of DER & DER No.-----

Street Address -----
City, State, Zip Code ----

N E W	1	FDR-2
	2	J.J. Doe NM-XYZ
	3	
	4	P.O. Box 418
	5	Kakaha, HI 96752

O L D	1	
	2	
	3	
	4	
	5	

FAA Form 1770-7(12-75)

DMIR/DER MAILING LIST
ACTION REQUEST

EXAMPLE - CONSULTANT DER

Appointing Office
Routing Symbol, List
Action, & Date -----

ANM-140L ORGANIZATION	<input checked="" type="checkbox"/> ADD <input checked="" type="checkbox"/> PROVIDE A KIT	<input type="checkbox"/> CHG. <input type="checkbox"/> DROP	DATE 8/5/85
▽			▽

Mailing List Code -----
Company Name -----
Name of DER & DER No.-----
Company Street Address ---
City, State, Zip Code ----

N E W	1	FDR-2
	2	Garrett Turbine Company
	3	J.J. Doe, NM-XYZ
	4	111 S. 34 St. P.O. Box 5217
	5	Phoenix, AZ 85010

O L D	1	
	2	
	3	
	4	
	5	

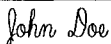
FAA Form 1770-7(12-75)

DMIR/DER MAILING LIST
ACTION REQUEST

EXAMPLE - COMPANY DER

Note: FAA Form 1770-7 is printed on 3" X 5" card stock.

APPENDIX 3. SAMPLES, FORMS, AND LETTERS
FIGURE 6. SAMPLE FAA Form 8110-3, STATEMENT OF COMPLIANCE WITH
THE FEDERAL AVIATION REGULATIONS

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS			DATE 11-15-88
AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION			
MAKE ABC-2	MODEL NO. 1121B	TYPE (Airplane, Radio, Helicopter, etc.) Airplane	NAME OF APPLICANT ABC Engineering Company
LIST OF DATA			
IDENTIFICATION ABC Manual 1234 Dated 10/20/86 1000047 Revision A 1000048 Revision C	TITLE Converter Regulatory Installation Manual Drawing - Converter Regulator Cooling Mod. Drawing - Scoop Assy. - Converter Regulator Cooling (Detail list of data - drawings, reports, etc., including revision level and dates) NOTE: This approval covers electrical details only		
PURPOSE OF DATA Original STC - This installation data provides additional cooling to the electrical system converter-regulator.			
APPLICABLE REQUIREMENTS (List specific sections) FAR 25.1301, 25.1309(a), 25.1359(d)(3) (Identify discrete paragraph/subparagraph that "Approval" or "Recommend Approval" addresses)			
CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered <u>1</u> have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations. <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Recommend approval of these data I (We) Therefore <input checked="" type="checkbox"/> Approve these data </div> <div align="right"> EITHER - AS APPROPRIATE </div> </div>			
SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)	DESIGNATION NUMBER(S)	CLASSIFICATION(S)	
	SW-535	Systems and Equipment	
(Signed by all applicable DER's)			


FAA Form 8110-3 (11-70) SUPERSEDES PREVIOUS EDITION (REPRESENTATION)
 (Sample FAA Form 8110-3 reduced to approximately 80% actual size)

APPENDIX 3. SAMPLES, FORMS, AND LETTERS
FIGURE 7. SAMPLE DER CANDIDATE FORM

DER CANDIDATE			DATE
STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS			
AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATIONS			
MAKE	MODEL NO.	TYPE (Airplane, Radio, Helicopter, etc.)	NAME OF APPLICANT
IDENTIFICATION	TITLE		
PURPOSE OF DATA			
APPLICABLE REQUIREMENTS <i>(List specific sections)</i>			
I (We) Therefore <input type="checkbox"/> Recommend approval of these data			
SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)	DESIGNATION NUMBER(S)	CLASSIFICATION(S)	
	DER CANDIDATE		

(Sample reduced to approximately 80% actual size)

APPENDIX 3. SAMPLES, FORMS, AND LETTERS
FIGURE 8. CERTIFICATE OF DESIGNATION

	
U S. Department of Transportation	(Address of appointing office goes here)
Federal Aviation Administration	(Date)
(DER's name and address goes here)	
Dear	
Renewal of Designation as FAA Designated Engineering Representative.	
Your status and recent activities as a Designated Engineering Representative (DER) have been reviewed with respect to the provisions of 14 CFR Part 183 of the Federal Aviation Regulations and we are pleased to advise you that your designation is renewed for a period of one year. The regulation categories, delegated functions and authorized areas in accordance with Order 8110.37B are listed below and also appear on the Certificate of Authority, FAA Form 8110-25.	
If the date identified on your last Certificate of Authority has passed pending receipt of this reappointment, your specific authority as a DER during the interim period is hereby confirmed.	
In the event that you wish to discuss any aspect of your appointment with respect to the delegated functions and authorized areas currently established for you, please feel free to contact us.	
In reply to this letter, please refer to:	
Sincerely,	
(Name and office of Authorizing Official)	

(Sample reduced to approximately 70% actual size)

APPENDIX 3. SAMPLES, FORMS, AND LETTERS
FIGURE 9. SAMPLE FAA Form 8110-3, IN SUPPORT OF A MAJOR ALTERATION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION			DATE June 30, 1988
STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS			
AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION			
MAKE Bell	MODEL NO. 222	TYPE (Airplane, Radio, Helicopter, etc.) Helicopter	NAME OF APPLICANT John Doe
LIST OF DATA			
IDENTIFICATION	TITLE		
Report No. SR 88-25, N.C. Dated 6-69-88	Stress Report, "EMS Equipment Installation, Bell Model 222 Helicopter S/N 47084".		
Sketch Dwg. 88 Dated 6-29-88	Sketch Package, EMS Equipment Installation, Pages 1, 2, & 3.		
	<u>Notes:</u> 1) The structural aspects only of the above listed data are approved herein. This approval is only for the engineering design data. 2) This approval is valid only for Bell Helicopter S/N 47084 and constitutes a major alteration of the subject aircraft. 3) The requirements of FAR 29.853 are not included in this approval and require separate approval. 4) The items of equipment covered by the listed data are a modified single litter installation, a patient monitor unit mounted to the cabin overhead structure and an oxygen bottle pallet, installation.		
PURPOSE OF DATA IN SUPPORT OF A MAJOR ALTERATION			
APPLICABLE REQUIREMENTS (List specific sections)			
FAR 29.301; .303; .305(a), (b)(1); .307(a); .561(a), (b), (c); .601(a), (b); .603; .605; .609; .611; .613; .625; .1541(a)(2), (b); .1557(a).			
CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered <u>N/A</u> have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations. I (We) Therefore <input type="checkbox"/> Recommend approval of these data <input checked="" type="checkbox"/> Approve these data			
SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)	DESIGNATION NUMBER(S)	CLASSIFICATION(S)	
<i>John Doe</i> JOHN DOE	SW-536	STRUCTURES	

FAA Form 8110-3 (11-70) SUPERSEDES PREVIOUS EDITION (REPRESENTATION)

(Sample reduced to approximately 80% actual size)

APPENDIX 3. SAMPLES, FORMS, AND LETTERS
FIGURE 10. SAMPLE FAA Form 8110-3, IN SUPPORT OF A MAJOR REPAIR

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS			DATE July 11, 1988
AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION			
MAKE Bell	MODEL NO. 206L-3	TYPE (Airplane, Radio, Helicopter, etc.) Helicopter	NAME OF APPLICANT John Doe
LIST OF DATA			
IDENTIFICATION Report No. SR 88-26, N.C. Dated 7-09-88 Sketch Dwg. 88-9 Dated 7-05-88	TITLE Stress Report, "Fuselage Repair, C.E.C". Installation Sketches, Pages 1, 2, 3, & 4. Fuselage Repair. Notes: 1) The structural aspects only of the above listed data are approved herein. This approval is only for the engineering design data. 2) This approval is valid only for Bell model 206L-3, Helicopter S/N 51122 and is issued in support of a major repair of the subject aircraft. 3) The systems and equipment aspects and the cabin interior arrangement are not included in this approval and require separate approval.		
PURPOSE OF DATA IN SUPPORT OF A MAJOR REPAIR			
APPLICABLE REQUIREMENTS (List specific sections) CAR 6.200; .201; .202(a),(b); .260; .300; .301; .302; .303; .304(a),(b); .305; .306; .307(d); .730(b),(c).			
CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered <u>N/A</u> have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations.			
I (We) Therefore <input type="checkbox"/> Recommend approval of these data <input checked="" type="checkbox"/> Approve these data			
SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)		DESIGNATION NUMBER(S)	CLASSIFICATION(S)
<i>John Doe</i> JOHN DOE		SW-536	STRUCTURES

FAA Form 8110-3 (11-70) SUPERSEDES PREVIOUS EDITION (REPRESENTATION)
(Sample reduced to approximately 80% actual size)

APPENDIX 3. SAMPLES, FORMS, AND LETTERS
FIGURE 11. SAMPLE FAA Form 8110-3, IN SUPPORT OF A JAR/VLA CERTIFICATION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION			DATE May 25, 1994
STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS			
AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION			
MAKE Smithson	MODEL NO. 401	TYPE (Airplane, Radio, Helicopter, etc.) Airplane	NAME OF APPLICANT Smith Aircraft Company
LIST OF DATA			
IDENTIFICATION	TITLE		
SAC 28001 Rev. C	Fuel flow test report		
SAC 18013 Rev. A	Auxiliary fuel tank test report		
SAC 181101 Rev. B	Auxiliary fuel system analysis		
2080014 Rev. F	Drawing - Fuel System Installation		
(Detail list of data - drawings, reports, etc., including revision level and/or dates)			
*FAR 21.17(b), JAR-VLA standards dated 26 April, 1990 (Indicate governing FAR)			
PURPOSE OF DATA In support of type certification of the fuel system for the Smithson 401 Aircraft.			
APPLICABLE REQUIREMENTS (List specific sections) JAR-VLA 955(a)(1), (b), (d); 957; 963(a)* (Identify discrete paragraph/subparagraph that "Approval" or "Recommend Approval" addresses.)			
CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered _____ have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations. I (We) Therefore <input type="checkbox"/> Recommend approval of these data <input checked="" type="checkbox"/> Approve these data			
SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)		DESIGNATION NUMBER(S)	CLASSIFICATION(S)
<i>James Bullock</i> James Bullock		NM-999	POWERPLANT INSTALLATIONS
<i>Brook Norton</i> Brook Norton		NM-827	SYSTEMS & EQUIPMENT

FAA Form 8110-3 (11-70) SUPERSEDES PREVIOUS EDITION (REPRESENTATION)

(Sample reduced to approximately 80% actual size)

APPENDIX 3. SAMPLE FORMS AND LETTERS
FIGURE 12. DER/FAA INTERACTION TRACKING FORM
DER/FAA INTERACTION TRACKING FORM

NAME: _____ (PRINT: Prefix, Last Name, First Name, Middle Name, Suffix)	DER #: _____	TEL. #: _____	FAX #: _____
DESIGNATION(s): _____ (Structures, Systems, Propulsion, Adm., etc.)			
ACTIVITY: FROM ____ TO ____ FAA ADVISOR Name: _____ ACO/BRANCH _____			
DER SIGNATURE: _____		DATE: _____	

PROVIDE A **BRIEF** SUMMARY OF YOUR ACTIVITIES WHICH REQUIRED INTERACTION WITH FAA PERSONNEL IN THE FOLLOWING KEY AREAS. INCLUDE PROJECT DESCRIPTIONS, PRODUCT MODELS (AIRCRAFT, ENGINES, PROPELLER, EQUIPMENT, ETC.) AND/OR FAA PROJECT NUMBERS, YOUR SPECIFIC CONTRIBUTIONS TO EACH APPLICABLE INTERACTION, AND YOUR PRIMARY INDIVIDUAL FAA ENGINEERING CONTACTS.

1. DEVELOPMENT OF CERTIFICATION PLANS/COMPLIANCE CHECKLISTS:
2. IDENTIFICATION AND RESOLUTION OF SIGNIFICANT TECHNICAL ISSUES (ISSUE PAPERS, EQUIVALENT SAFETY: (FINDINGS, SPECIAL CONDITIONS, EXEMPTIONS, ETC.)
3. REVIEW AND APPROVAL OF COMPLIANCE DATA:
4. INVOLVEMENT IN PROJECT MANAGEMENT/ADMINISTRATION:
5. REVIEW AND APPROVAL OF REPAIR/ALTERATION DATA: (ACTIVITIES IN SUPPORT OF FAA FORM 337, REPAIR STATIONS, ETC.)
6. INVESTIGATION AND RESOLUTION OF SIGNIFICANT SERVICE DIFFICULTIES:
7. PARTICIPATION IN TECHNICAL EXCHANGES: (MEETINGS AND TELECONS ON GENERAL TECHNICAL SUBJECTS)
8. PARTICIPATION IN FAA TRAINING/SEMINARS:

FOR FAA USE ONLY	
<input type="checkbox"/> ALL REQUIRED DER EVALUATION FORMS COMPLETED	<input type="checkbox"/> DER RENEWAL PROCESSED
ACO/BRANCH ADVISOR SIGNATURE: _____	DATE: _____

SUBMITTAL OF THIS FORM IS MANDATORY FOR DER RENEWAL
FOR OFFICIAL USE ONLY
PUBLIC AVAILABILITY TO BE DETERMINED UNDER TITLE 5, UNITED STATES CODE SECTION 552

APPENDIX 3. SAMPLE FORMS AND LETTERS
FIGURE 13. BACK SIDE OF DER INTERACTION TRACKING FORM

1. DEVELOPMENT OF CERTIFICATION PLANS/COMPLIANCE CHECKLISTS:

Indicate projects where you have identified applicable regulations and methods of compliance for a design or design change. Indicate programs that required you to provide program schedules which identified critical milestones leading to FAA certification. List FAA personnel, i.e., engineers, flight test pilots, inspectors, and other FAA designees where communications took place in the course of this activity. Note: Detail project information is not required.

2. IDENTIFICATION AND RESOLUTION OF SIGNIFICANT TECHNICAL ISSUES:

For the certification projects in which you have participated, describe your work with the FAA in identifying certification related areas of new technology, areas where compliance methodology may have been new or controversial, or areas where existing regulations or policy were inadequate. Identify Issue Papers that resulted from your efforts and your contribution to the resolution of those issues.

3. REVIEW AND APPROVAL OF COMPLIANCE DATA:

Describe, in detail, your activities in reviewing and approving (or recommending for approval) compliance data. Compliance data consists of both type design data and type certification data. Type design data includes drawings, specifications, and other data which defines the product. Type certification data includes test plans, test reports, analyses, or other data used to demonstrate compliance with the applicable FARs. Note: Do not describe design details that may be considered proprietary by the applicant.

4. INVOLVEMENT IN PROJECT MANAGEMENT/ADMINISTRATION:

Describe your project management/administration activities. Describe how you insured effective coordination between the applicant and the FAA, and how you facilitated certification program activities (e.g., the submittal of compliance data, and the scheduling of conformities, testing, compliance inspections, etc.).

5. REVIEW AND APPROVAL OF REPAIR/ALTERATION DATA:

Indicate your coordination activities with the FAA in approving repair or alteration data, especially on critical or life-limited parts. Describe when the coordination occurred, how the appropriate regulations were identified to the FAA, and the nature of supporting substantiating data.

6. INVESTIGATION AND RESOLUTION OF SIGNIFICANT SERVICE DIFFICULTIES:

Describe your DER role in identifying and/or resolving specific significant service difficulties. Be sure to identify key FAA contacts and any service information that resulted from your efforts.

7. PARTICIPATION IN TECHNICAL EXCHANGES:

Please describe important DER/FAA technical exchanges in which you have participated, such as general technical meetings with FAA specialists or management, and discussions with FAA specialists concerning technical issues related to your delegation. Note: Do not describe design details that may be considered proprietary by the applicant.

8. PARTICIPATION IN FAA TRAINING AND/OR SEMINARS:

Describe the FAA sponsored technical conferences, seminars, workshops, and presentations you have attended within this appointment period relating to your DER authorization.

APPENDIX 3. SAMPLE FORMS AND LETTERS
FIGURE 14. DER PERFORMANCE EVALUATION FORM

DER PERFORMANCE EVALUATION FORM

NAME: _____	DER #: _____	TEL. #: _____	FAX #: _____
<small>(PRINT: Prefix, Last Name, First Name, Middle Name, Suffix)</small>			
DESIGNATION(s): _____			
<small>(Structures, Systems, Propulsion, Adm., etc.)</small>			
EVALUATION FROM _____ TO _____	FAA EVALUATOR Name: _____		ACO/BRANCH: _____
<small>(PRINT)</small>			

For the above named DER, rate performance in each of the following categories by placing an "X" under column **SAT** for Satisfactory, column **NEEDS IMPR** for Needs Improvement, column **UNSAT** for Unsatisfactory, or column **N/OB** for Not Observed. For any rating other than Satisfactory, the FAA evaluator is required to contact the DER directly, and to document in the "REMARKS" section how the concern has been or will be resolved. Resolution action may range from a recommendation for non-renewal to an indication that the DER has agreed to work closely with the FAA during the next evaluation period to resolve the concern. Indicate your recommendation for renewal at the bottom of the form above your signature.

	NEEDS			
	SAT	IMPR	UNSAT	N/OB
1. ACTIVITY LEVEL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. DIRECT FAA CONTACT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. DER/FAA INTERACTION FORM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. APPLICATION OF REGULATIONS, POLICY, AND GUIDANCE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. ADHERENCE TO DER PROCEDURES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. SHOWS INTEGRITY, SOUND JUDGMENT, COOPERATIVE ATTITUDE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. SHOWS TECHNICAL COMPETENCE IN AREA OF APPOINTMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. ATTENDANCE AT REQUIRED TRAINING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. ABILITY TO COMMUNICATE CLEARLY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. QUALITY OF SUBMITTALS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. TIMELY IDENTIFICATION OF SIGNIFICANT ISSUES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. TIMELY SUBMITTAL OF DATA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

REMARKS: (Explain all **Needs Impr**, **Unsat**, **N/Ob** evaluations and provide resolution; Attach additional pages as required)

Recommend Renewal? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Change authorization as noted in Remarks			
Evaluator Signature: _____		Date: _____	
DER Signature: _____		Date: _____	
<small>(if required)</small>			

COMPLETION OF THIS FORM IS MANDATORY FOR DER RENEWAL
FOR OFFICIAL USE ONLY

PUBLIC AVAILABILITY TO BE DETERMINED UNDER TITLE 5, UNITED STATES CODE, SECTION 552

APPENDIX 3. SAMPLE FORMS AND LETTERS
FIGURE 15 BACK SIDE OF PERFORMANCE EVALUATION FORM

PERFORMANCE ELEMENT DEFINITIONS

1. ACTIVITY LEVEL: The DER is actively utilizing the delegated authority. Typical indication would be the submittal of completed FAA Form 8110-3 (8110-3s) in the delegated area. If 8110-3s are not submitted, the DER may be actively assisting the FAA in other ways such as witnessing testing or identifying and resolving certification issues, although the authority itself is not utilized.
2. DIRECT FAA CONTACT: In the delegated area, the DER has direct contact with the FAA on technical and project issues. The DER keeps the FAA informed of activities. Indicators would be office visits, phone calls, attendance at project meetings, or attendance at Designee Conferences.
3. DER/FAA INTERACTION TRACKING FORM: The DER submitted the required key interaction form. Indicator would be a complete, accurate, and timely interaction form.
4. APPLICATION OF REGULATIONS, POLICY, AND GUIDANCE: The DER properly applied airworthiness requirements and technical or administrative policy and guidance. Indicators may include a showing of understanding and proper application of regulations etc. during the course of certification projects, including meetings with the FAA, and appropriate compliance findings.
5. ADHERENCE TO DER PROCEDURES: The DER followed the DER handbook and other national or local directives in performing DER functions. Indicators would be submittal of properly completed 8110-3s, coordinating with FAA on unique and novel design features, receiving permission to witness or conduct tests, verification of conformity prior to witnessing tests, properly utilizing authority, etc. DER procedures require coordination with FAA Engineering on unique or novel designs, generation of Certification Plans, appropriate and timely requests for conformity, generation of tests plans, verification of satisfactory conformity findings prior to witnessing certification tests when delegated by the FAA and approval of compliance data in a timely and correct sequential manner. The DER should have a good understanding of when the DER may "Approve" vs. "Recommend Approval" for a compliance submittal (8110-3) and a clear understanding of the discrete areas of delegation that the DER may address.
6. SHOWS INTEGRITY, SOUND JUDGMENT AND COOPERATIVE ATTITUDE: The DER was honest, complete, and forthcoming with information in all dealings with the FAA. The DER exercised sound judgment in making technical and project decisions. Conduct was professional, and the DER fully cooperated with the FAA in resolving technical and program issues. Indicators may be direct experience with the DER, including participation in certification meetings, where the DER is forthcoming and cooperatively seeks resolution of issues.
7. SHOWS TECHNICAL COMPETENCE IN AREA OF APPOINTMENT: The DER's technical work and interaction with the FAA, particularly on complex technical issues, shows the DER's competence in the delegated area. Indicators of competence would include properly developed test plans, appropriate compliance findings, and technically accurate and complete substantiation and test reports.
8. ATTENDANCE AT REQUIRED TRAINING: The DER attended any training required by the Agency, including that which may be required by the administering ACO. Indicator would be attendance at required training, seminars, conferences, etc.
9. ABILITY TO COMMUNICATE CLEARLY: The DER communicated effectively, both orally and in writing, such that technical and administrative issues are clearly understood. Indicators would be effective oral communications during certification meetings, telephone conversations, and other direct contacts with FAA employees. Written reports, substantiation, and communications are complete and well organized.
10. QUALITY OF SUBMITTALS: The DER's data submittals are complete, logically arranged, legible, accurate, and clearly establish compliance with the applicable airworthiness requirements such that review by the FAA may be minimal. Indicators would be test plans, test reports, substantiation, drawings, etc. that meet the listed criteria.
11. TIMELY IDENTIFICATION OF SIGNIFICANT ISSUES: As early as practical in the program, the DER identified to the FAA areas of new technology, unusual design features, or those areas requiring special guidance or direct FAA involvement. Indicators would include timely informal contacts to alert the FAA to areas of concern and participation in certification meetings to identify significant technical issues for Issue Papers.
12. TIMELY SUBMITTAL OF DATA: DER submittal of compliance data was in a time frame consistent with program schedule and required FAA review. DER consistently avoids last minute "data dumps," thus allowing adequate time for FAA actions prior to critical program milestones.

APPENDIX 3. SAMPLES, FORMS, AND LETTERS

FIGURE 16. SAMPLE FAA FORM 8110-3 IDENTICALITY NOTATIONS

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION			DATE
STATEMENT OF COMPLIANCE WITH THE FEDERAL AVIATION REGULATIONS			
AIRCRAFT OR AIRCRAFT COMPONENT IDENTIFICATION			
MAKE	MODEL NO.	TYPE (Airplane, Radio, Helicopter, etc.)	NAME OF APPLICANT
LIST OF DATA			
IDENTIFICATION	TITLE		
	<p>FAA approval of the design is contingent upon FAA engineering verification of the type design (or TSOA) data listed.</p> <p>FAA approval of the design is contingent upon FAA engineering verification of the type design data listed.</p>		
PURPOSE OF DATA Identity only approval under 21.303			
APPLICABLE REQUIREMENTS (List specific sections) FAR 21.303(c)(4)			
<p>CERTIFICATION - Under authority vested by direction of the Administrator and in accordance with conditions and limitations of appointment under Part 183 of the Federal Aviation Regulations, data listed above and on attached sheets numbered _____ have been examined in accordance with established procedures and found to comply with applicable requirements of the Federal Aviation Regulations.</p> <p>I (We) Therefore <input type="checkbox"/> Recommend approval of these data <input checked="" type="checkbox"/> Approve these data</p>			
SIGNATURE(S) OF DESIGNATED ENGINEERING REPRESENTATIVE(S)		DESIGNATION NUMBER(S)	CLASSIFICATION(S)

FAA Form 8110-3 (11-70) SUPERSEDES PREVIOUS EDITION (REPRESENTATION)

(Example FAA Form 8110-3 reduced to approximately 80% actual size)

APPENDIX 3. SAMPLES, FORMS, AND LETTERS
FIGURE 17. SAMPLE LETTER AUTHORIZING DATA APPROVAL FOR REPAIRS
AND ALTERATIONS

(DER Name)
Designated Engineering Representative
(Address)
(City), (State) (ZIP Code)

Dear (DER):

You are authorized to approve data for repairs and alterations that are within the scope of your authority as defined on your Certificate of Authority, FAA Form 8110-25, without obtaining prior Aircraft Certification Office (ACO) approval as required by FAA Order 8110.37X, paragraph XX. This authorization is for repairs and alterations that do not involve critical or life-limited parts, or if the work will be done outside the country.

This authorization will remain in effect until surrendered, suspended, revoked, or otherwise terminated. Should you have any questions, contact (ACO Advisor) at telephone number (number).

Sincerely;

(Manager)
Manager, _____ Certification Office,
Aircraft Certification Service

APPENDIX 3. SAMPLES, FORMS, AND LETTERS

FIGURE 18. FORM AVAILABILITY

The following forms are stocked in the FAA Logistics Center,
AML-642, P.O. Box 25082, Oklahoma City, Oklahoma 73125.
Phone: (405) 954-5683

<u>Number</u>	<u>Title</u>	<u>FAA Form Number</u>	<u>NSN</u>
	Certificate of Designation	Form 8000-5	0052-00-055-0501
	Statement of Compliance with the Federal Aviation Regulations	Form 8110-3	0052-00-046-5001
	Statement of Qualifications	Form 8110-14	0052-00-047-2003
	Certificate of Authority-DER	Form 8110-25	0052-00-873-8000
	DMIR/DER Mailing List Action Request	Form 1770-7	0052-00-851-8000

All Forms, Unit of Issue: Sheet

NOTE: Any of the above forms may be computer generated. A computer generated form must be so identical to the stock printed form that there is no confusion, mistake, or uncertainty as to what the computer generated form is and how it is to be used. A computer generated form must be the same size; have the same general layout and configuration; use the same sequencing, numbering and arrangement of information and use the identical wording of the stock form. Computer generated and stock printed forms may be used interchangeably. Each ACO will determine if and to what extent it will accept and use computer generated forms.

**APPENDIX 4 - ADDRESSES
AIRCRAFT CERTIFICATION OFFICES**

Anchorage Aircraft Certification Office (ACE-115N)
Federal Aviation Administration
605 West 4th Avenue, Room 214
Anchorage, AK 99501
Phone: (907) 271-2668
FAX: (907) 279-2527

Atlanta Aircraft Certification Office (ACE-115A)
Federal Aviation Administration
1701 Columbia Avenue, Suite 2-160
College Park, GA 30337-2748
Phone: (404) 305-7340
FAX: (404) 305-7348

Boston Aircraft Certification Office (ANE-150)
Federal Aviation Administration
12 New England Executive Park
Burlington, MA 01803
Phone: (617) 238-7150
FAX: (617) 238-7199

Brussels Aircraft Certification Division (AEU-100)
Federal Aviation Administration
15•rue de la Loe (1st floor)
B-1040
Brussels, Belgium
Phone: 9-011-32 2 508 Extension 2710
FAX: 901 (32)2 230 68 99

Chicago Aircraft Certification Office (ACE-115C)
Federal Aviation Administration
2300 East Devon Avenue
Des Plaines, IL 60018
Phone: (847) 294-7357
FAX: (847) 294-7834

Denver Aircraft Certification Office (ANM-100D)
Federal Aviation Administration
26805 E. 68th Ave., Room 214
Denver, CO 80219
Phone: (303) 342-1080
FAX: (303) 342-1088

Engine Certification Office (ANE-140)
Federal Aviation Administration
12 New England Executive Park
Burlington, MA 01803
Phone: (617) 238-7140
FAX: (617) 238-7199

APPENDIX 4 - ADDRESSES AIRCRAFT CERTIFICATION OFFICES (Continued)

Fort Worth Airplane Certification Office(ASW-150) |
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137
Phone: (817) 222-5150
FAX: (817) 222-5959

Fort Worth Rotorcraft Certification Office(ASW-170) |
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137
Phone: (817) 222-5170
FAX: (817) 222-5959

Fort Worth Special Certification Office(ASW-190) |
Federal Aviation Administration
2601 Meacham Blvd.
Fort Worth, TX 76137
Phone: (817) 222-5190
FAX: (817) 222-5959

Los Angeles Aircraft Certification Office(ANM-100L) |
Federal Aviation Administration
3960 Paramount Blvd.
Lakewood, CA 90712
Phone (310) 627-5200
FAX: (310) 627-5210

New York Aircraft Certification Office(ANE-170) |
Federal Aviation Administration
10 5th Street, 3rd Floor
Valley Stream, NY 11581
Phone: (516) 256-7500
FAX: (516) 568-2716

Seattle Aircraft Certification Office(ANM-100S) |
Federal Aviation Administration
1601 Lind Avenue SW
Renton, WA 98055-4056
Phone: (206) 227-2180
FAX: (206) 227-1181

Wichita Aircraft Certification Office(ACE-115W) |
Federal Aviation Administration
1801 Airport Road, Room 100
Wichita, KS 67209
Phone: (316) 946-4100 |
FAX: (316) 946-4407



U.S. Department
of Transportation

**Federal Aviation
Administration**

Directive Feedback Information

Please submit any written comments or recommendations for improving this directive, or suggest new items or subjects to be added to it. Also, if you find an error, please tell us about it.

Subject: Order 8110.37B

To: Directive Management Officer, AIR-520

(Please check all appropriate line items)

☐ An error (procedural or typographical) has been noted in paragraph _____ on page _____.

☐ Recommend paragraph _____ on page _____ be changed as follows:
(attach separate sheet if necessary)

☐ In a future change to this directive, please include coverage on the following subject
(briefly describe what you want added):

☐ Other comments:

☐ I would like to discuss the above. Please contact me.

Submitted by: _____ Date: _____

FTS Telephone Number: _____ Routing Symbol: _____